

FT-950 CAT OPERATION REFERENCE BOOK

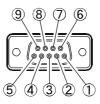
OVERVIEW

The CAT (Computer Aided Transceiver) System in the **FT-950** transceiver provides control of frequency, VFO, memory, and other settings such as dual-channel memories and diversity reception using an external personal computer. This allows multiple control operations to be fully automated as single mouse clicks or keystroke operations on the computer keyboard.

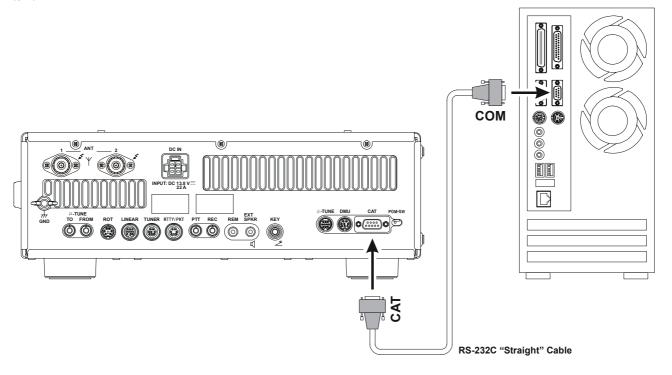
The **FT-950** transceiver has a built-in level converter, allowing direct connection from the rear-panel **CAT** jack to the serial port of your computer without the need of any external boxes. You will need a serial cable for connection to the RS-232C (serial or COM port) connector on your computer. Purchase a *standard serial cable* (not the so-called "null modem" type), ensuring it has the correct gender and number of pins (some serial COM port connectors use a 9-pin rather than 25-pin configuration). If your computer uses a custom connector, you may have to construct the cable. In this case, refer to the technical documentation supplied with your computer for correct data connection.

Vertex Standard does not produce CAT System operating software due to the wide variety of personal computers and operating systems in use today. However, the information provided in this chapter explains the serial data structure and opcodes used by the CAT system. This information, along with the short programming examples, is intended to help you start writing programs on your own. As you become more familiar with CAT operation, you can customize programs later on for your operating needs and discover the true operating potential of this system.

CAT JACK



- ·		1/0	-
Pin No.	PIN NAME	I/O	Function
①	N/A	_	_
2	SERIAL OUT	Output	Outputs the Serial Data from the
			transceiver to the computer.
3	SERIAL IN	Input	Inputs the Serial Data from the
			computer to the transceiver.
4	N/A	_	_
(\$)	GND	_	Signal Ground
6	N/A	_	_
7	RTS	Input	When the computer is not ready
			to receive data, this port goes to
			"L" for inhibit the transmit data
			from the transceiver.
8	CTS	Output	When the transceiver is not ready
			to receive data, this port goes to
			"L" for inhibit the transmit data
			from the computer.
9	N/A	_	_



CONTROL COMMAND

A computer control command is composed of an alphabetical command, various parameters, and the terminator that signals the end of the control command.

Example: Set the VFO-A frequency to 14.250000 MHz.

 $\begin{array}{cccc} \textbf{FA} & \textbf{14250000} & \textbf{;} \\ \uparrow & \uparrow & \uparrow \\ \textbf{Command} & \textbf{Parameter} & \textbf{Terminator} \end{array}$

There is three for the **FT-950** Command as shown below:

Set command: Set a particular condition

(to the **FT-950**)

Read command: Reads an answer

(from the FT-950)

Answer command: Transmits a condition

(from the **FT-950**)

For example, note the following in the case of the FA command (Set the VFO-A frequency):

☐ To set the VFO-A frequency to 14.250000 MHz, the following command is sent from the computer to the transceiver:

"FA14250000;" (Set command)

☐ To read the VFO-A frequency, the following command is sent from the computer to the transceiver:

"FA;" (Read command)

☐ When the Read command above has been sent, the following command is returned to the computer:

"FA14250000;" (Answer command)

Alphabetical Commands

A command consists of 2 alphabetical characters.

You may use either lower or upper case characters. The commands available for this transceiver are listed in the "PC Control Command Tables" on the following pages.

Parameters

Parameters are used to specify information necessary to implement the desired command.

The parameters to be used for each command are predetermined. The number of digits assigned to each parameter is also predetermined. Refer to the "Control Command List" and the "Control Command Tables" to configure the appropriate parameters.

When configuring parameters, be careful not to make the following mistakes.

For example, when correct parameter is "**ISO+1000**" (IF SHIFT):

IS01000

Not enough parameters specified (No direction (+) given for the IF shift)

IS0+100;

Not enough digits (Only three frequency digits given)

ISO + 1000;

Unnecessary characters between parameters

IS0+10000:

Too many digits (Five frequency digits given)

Note: If a particular parameter is not applicable to the **FT-950**, the parameter digits should be filled using any character except the ASCII control codes (00 to 1Fh) and the terminator (;).

Terminator

To signal the end of a command, it is necessary to use a semicolon (;). The digit where this special character must appear differs depending on the command used.

CONTROL COMMAND LIST

COMMAND	Function	SET	READ	Ans.	Al	COMMAND	Function	SET	READ	Ans.	Al
AB	VFO-A TO VFO-B	0	Х	Х	Х	MS	METER SW	0	0	0	0
AC	ANTENNA TUNER CONTROL	0	0	0	0	MW	MEMORY WRITE	0	X	Х	X
AG	AF GAIN	0	0	0	0	MX	MOX SET	0	0	0	0
Al	AUTO INFORMATION	0	0	0	Х	NA	NARROW	0	0	0	0
AM	VFO-A TO MEMORY CHANNEL	0	Х	Х	Х	NB	NOISE BLANKER	0	0	0	0
AN	ANTENNA NUMBER	0	0	0	0	NL	NOISE BLANKER LEVEL	0	0	0	0
ВС	AUTO NOTCH	0	0	0	0	NR	NOISE REDUCTION	0	0	0	0
BD	BAND DOWN	0	Х	Х	Х	OI	OPPOSITE BAND INFORMATION	Х	0	0	Х
ВІ	BREAK-IN	0	0	0	0	os	OFFSET (REPEATER SHIFT)	0	0	0	0
BP	MANUAL NOTCH	0	0	0	0	PA	PRE-AMP (IPO)	0	0	0	0
BS	BAND SELECT	0	Х	Х	Χ	РВ	PLAY BACK	0	0	0	Х
BU	BAND UP	0	Х	Х	Χ	PC	POWER CONTROL	0	0	0	0
BY	BUSY	Х	0	0	0	PL	SPEECH PROCESSOR LEVEL	0	0	0	0
СН	CHANNEL UP/DOWN	0	Х	Х	Х	PR	SPEECH PROCESSOR	0	0	0	0
CN	CTCSS NUMBER	0	0	0	0	PS	POWER SWITH	0	0	0	Х
СО	CONTOUR	0	0	0	0	QI	QMB STORE	0	Х	Х	Х
CS	CW SPOT	0	0	0	0	QR	QMB RECALL	0	Х	Х	Χ
СТ	CTCSS	0	0	0	0	QS	QUICK SPLIT	0	Х	Х	Χ
DA	DIMMER	0	0	0	Χ	RA	RF ATTENUATOR	0	0	0	0
DN	DOWN	0	Х	Х	Х	RC	CLAR CLEAR	0	Х	Х	Х
DP	DISPLAY	0	0	0	0	RD	CLAR DOWN	0	Х	Х	Х
ED	ENCORDER DOWN	0	Х	Х	Χ	RF	ROOFING FILTER	0	0	0	0
EK	ENT KEY	0	Х	Х	Х	RG	RF GAIN	0	0	0	0
EU	ENCORDER UP	0	Х	Х	Χ	RI	RADIO INFORMATION	Х	0	0	0
EX	MENU	0	0	0	0	RL	NOISE REDUCTION LEVEL	0	0	0	0
FA	FREQUENCY VFO-A	0	0	0	0	RM	READ METER	Х	0	0	0
FB	FREQUENCY VFO-B	0	0	0	0	RO	ROTATOR	0	0	0	Х
FK	FUNCTION KEY	0	Х	Х	Х	RS	RADIO STATUS	Х	0	0	0
FR	FUNCTION RX	0	0	0	0	RT	CLAR	0	0	0	0
FS	FAST STEP	0	0	0	0	RU	CLAR UP	0	X	X	X
FT	FUNCTION TX	0	0	0	0	SC	SCAN	0	0	0	0
GT	AGC FUNCTION	0	0	0	0	SD	SEMI BREAK-IN DELAY TIME	0	0	0	0
ID	IDENTIFICATION	X	0	0	X	SF	SUB-DIAL FUNCTION	0	0	0	0
IF	INFORMATION	X	0	0	0	SH	WIDTH	0	0	0	0
IS	IF-SHIFT	0	0	0	0	SM	S METER	X	0	0	0
KM	KEYER MEMORY KEY PITCH	0	0	0	X	SQ	SQUELCH LEVEL SWAP VFO	0	O X	O X	O X
		0	0	0				0	0	X 0	X 0
KR	KEYER KEY SPEED	0	0	0	0	TS	TXW TX SET	0	0	0	0
KY	CW KEYING	0	X	Х	X	UL	UNLOCK	X	0	0	0
LK	LOCK	0	0	0	0	UP	UP	0	X	Х	Х
LM	LOAD MESSEGE	0	0	0	X	VD	VOX DELAY TIME	0	0	0	0
MA	MEMORY CHANNEL TO VFO-A	0	X	Х	X	VF	VRF FILTER	0	0	0	0
MC	MEMORY CHANNEL	0	0	0	X	VG	VOX GAIN	0	0	0	0
MD	MODE	0	0	0	0	VM	[V/M] KEY FUNCTION	0	X	X	X
MG	MIC GAIN	0	0	0	0	VS	VFO SELECT	0	0	0	0
MK	MODE KEY	0	Х	X	X	VX	VOX	0	0	0	0
ML	MONITOR LEVEL	0	0	0	0	XT	TX CLAR	0	0	0	0
MR	MEMORY READ	X	0	0	X	Α.			 		
	MEMORI READ	_^_			^	I					

AB	VEC)_A T	O VI	FO-B							
Set	1	2	3	4	5	6	7	8	9	10	
1001	_	_		-	"	-	- '	-	9	10	
Dand	Α	В	,		<u> </u>		-	_	_		
Read	1	2	3	4	5	6	7	8	9	10	
L											
Answer	1	2	3	4	5	6	7	8	9	10	
AC	AN	<u> TENN</u>	IA T	UNE	R CO	NTR	OL				
Set	1	2	3	4	5	6	7	8	9	10	P1 0: Fixed P3 0: Tuner "OFF"
	Α	С	P1	P2	P3	;					P2 0: Fixed 1: Tuner "ON"
Read	1	2	3	4	5	6	7	8	9	10	2: Tuning Start
1	Α	С	:								
Answer	1	2	3	4	5	6	7	8	9	10	
	A	С	P1	P2	P3			_	_	1	
				1 2	113	,					
AG	ΔF	GAIN									
Set	1	2	3	4	5	6	7	8	9	10	P1 0: Fixed
1001	A	G	P1	P2	P2	P2			3	10	P2 000 - 255
Read							,			40	
Reau	1	2	3	4	5	6	7	8	9	10	
L	Α	G	P1	;	-						
Answer	1	2	3	4	5	6	7	8	9	10	
	Α	G	P1	P2	P2	P2	ļ ;				
Al	AU			RMAT							
Set	1	2	3	4	5	6	7	8	9	10	P1 0: Auto Information "OFF"
	Α	-	P1	;							1: Auto Information "ON"
Read	1	2	3	4	5	6	7	8	9	10	This parameter is set to "0" (OFF) automatically when the transceiver is turned "OFF."
1	Α	Т	:								
Answer	1	2	3	4	5	6	7	8	9	10	
	A	Ī	P1	Ė	۰	Ť		<u> </u>	<u> </u>		
	А	'	Г	,							
AM	VFC)_Δ Τ	ОМ	FΜΩ	RY C	:ΗΔΝ	INFI				
Set	1	2	3	4	5	6	7	8	9	10	
1001	Ā	M		-	"	"	<u> </u>		3	10	
Read			,	٠.	-		-	_		40	
	l 1	2	3	4	5	6	7	8	9	10	
111000			-								
Answer	1	2	3	4	5	6	7	8	9	10	
	1			4	5	6	7	8	9	10	
Answer		2	3			6	7	8	9	10	
Answer		2 TENN	3 IA N	4 UMB				8		10	
Answer		2	3 IA N 3	UMB 4		6	7	8	9	10	P1 0: Fixed
Answer	AN	2 TENN	3 IA N	UMB	ER						P2 1: ANT "1"
Answer	AN 7	2 FENN 2	3 IA N 3	UMB 4	ER 5						P2 1: ANT "1" 2: ANT "2"
Answer AN Set	1 A 1	2 TENN 2 N 2	3 IA N 3 P1 3	UMB 4 P2 4	5 ;	6	7	8	9	10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "1"
Answer An Set Read	1 A 1 A A	2 N 2 N	3 P1 3 P1	UMB 4 P2 4	5 5 5	6	7	8	9	10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "1" 2: ANT "2"
Answer AN Set	1 A 1 A 1	2 N 2 N 2	3 P1 3 P1 3	UMB 4 P2 4 ;	5 ; 5	6 6	7	8	9	10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "1"
Answer An Set Read	1 A 1 A A	2 N 2 N	3 P1 3 P1 3	UMB 4 P2 4 ;	5 5 5	6	7	8	9	10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "1" 2: ANT "2"
Answer Answer Read Answer	1 A 1 A 1 A	2 N 2 N 2 N	3 P1 3 P1 3 P1 3	UMB 4 P2 4 ; 4 P3	5 ; 5	6 6	7	8	9	10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "1" 2: ANT "2"
Answer Answer Read Answer	1 A 1 A 1 A A A A A A A A A A A A A A A	2 N 2 N 2 N 2	3 P1 3 P1 3 P1 0TC	UMB 4 P2 4 ; 4 P3	5 ; 5 P4	6 6 ;	7 7 7	8 8	9 9	10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "1" 2: ANT "2" P4 0: Fixed
Answer Answer Read Answer	1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A	2 N 2 N 2 N 2 N 2 N 2 N 2 N 2 N 2 N 2 N	3 P1 3 P1 3 P1 3 P1	UMB 4 P2 4 ; 4 P3	5 ; 5 P4	6 6	7	8	9	10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "1" 2: ANT "2" P4 0: Fixed
Answer Read Answer BC Set	1 A 1 A 1 A 1 A B	2 N 2 N 2 N 2 N	3 P1 3 P1 3 P1 OTC	UMB 4 P2 4 ; 4 P3	5 ; 5 5 P4	6 6 ;	7 7 7	8 8 8	9 9	10 10 10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "1" 2: ANT "2" P4 0: Fixed
Answer Answer Read Answer	ANT 1 A 1 A 1 A 1 B 1	2 N 2 N 2 N 2 N 2 C	3 P1 3 P1 3 P1 0TC 3 P1 3	UMB 4 P2 4 ; 4 P3 H 4 P2 4	5 ; 5 P4	6 6 ;	7 7 7	8 8	9 9	10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "4" 2: ANT "2" P4 0: Fixed P1 0: Fixed P2 0: Auto Notch "OFF"
Answer Read Answer BC Set Read	1 A 1 A 1 A 1 A B	2 N 2 N 2 N 2 N 2 C C 2	3 P1 3 P1 3 P1 OTC	UMB 4 P2 4 ; 4 P3 H 4 P2 4 ;	5 5 5 P4	6 6 ;	7 7 7 7	8 8 8	9 9 9	10 10 10 10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "4" 2: ANT "2" P4 0: Fixed P1 0: Fixed P2 0: Auto Notch "OFF"
Answer Read Answer BC Set	ANT 1 A 1 A 1 A 1 B 1	2 N 2 N 2 N 2 N 2 C	3 P1 3 P1 3 P1 0TC 3 P1 3	UMB 4 P2 4 ; 4 P3 H 4 P2 4 ; 4 P3	5 ; 5 5 P4	6 6 ;	7 7 7	8 8 8	9 9	10 10 10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "4" 2: ANT "2" P4 0: Fixed P1 0: Fixed P2 0: Auto Notch "OFF"
Answer Read Answer BC Set Read	AN ¹ A 1 A 1 A 1 B 1 B	2 N 2 N 2 N 2 N 2 C C 2	3 P1 3 P1 3 P1 0TC 3 P1 3 P1	UMB 4 P2 4 ; 4 P3 H 4 P2 4 ;	5 5 5 P4	6 6 ;	7 7 7 7	8 8 8	9 9 9	10 10 10 10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "4" 2: ANT "2" P4 0: Fixed P1 0: Fixed P2 0: Auto Notch "OFF"
Answer Answer Read Answer BC Set Read Answer	ANT 1	2 N 2 N 2 N C C 2 C C C C C	3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1	UMB 4 P2 4 ; 4 P3 H 4 P2 4 ; 4 P2	5 ; 5 P4	6 6 ;	7 7 7 7	8 8 8	9 9 9	10 10 10 10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "4" 2: ANT "2" P4 0: Fixed P1 0: Fixed P2 0: Auto Notch "OFF"
Answer Answer Read Answer BC Set Read Answer	ANT 1	2 N 2 N 2 N C C C 2 C C 2	3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1	UMB 4 P2 4 ; 4 P3 H 4 P2 4 ; 4 P2	5 ; 5 P4	6 6 ;	7 7 7 7	8 8 8	9 9 9	10 10 10 10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "4" 2: ANT "2" P4 0: Fixed P1 0: Fixed P2 0: Auto Notch "OFF"
Answer Answer Read Answer BC Set Read Answer	ANT 1	2 N 2 N 2 N C C 2 C C C C C	3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1	UMB 4 P2 4 ; 4 P3 H 4 P2 4 ; 4 P2	5 ; 5 P4	6 6 ;	7 7 7 7	8 8 8	9 9 9	10 10 10 10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "4" 2: ANT "2" P4 0: Fixed P1 0: Fixed P2 0: Auto Notch "OFF"
Answer Answer Read Answer BC Set Read Answer	ANT 1 A 1 A 1 A 1 B 1 B 1 B BAN	2 N 2 N 2 N C C C C C C C C C C C C C C	3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1	UMB 4 P2 4 ; 4 P3 H 4 P2 4 ; 4 P2 4 ; 4 P2	5 5 5 P4	6 6 6	7 7 7 7 7 7 7	8 8 8 8 8	9 9 9 9 9	10 10 10 10 10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "2" 2: ANT "2" P4 0: Fixed P1 0: Fixed P2 0: Auto Notch "OFF" 1: Auto Notch "ON"
Answer Answer Read Answer BC Set Read Answer	ANT	2 N 2 N 2 N 2 N C C C C C C C C C C C C	3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1	UMB 4 P2 4 ; 4 P3 H 4 P2 4 ; 4 P2 4 ; 4 P2 4 ; 4 P2	5 ; 5 P4	6 6 6 6	7 7 7 7 7 7 7	8 8 8 8 8	9 9 9 9 9	10 10 10 10 10 10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "2" 2: ANT "2" P4 0: Fixed P1 0: Fixed P2 0: Auto Notch "OFF" 1: Auto Notch "ON"
Answer Answer Read Answer BC Set Read Answer	ANT 1 A 1 A 1 A 1 B 1 B 1 B 1 B 1 B 1 B 1 B	2 N 2 N 2 N 2 N 2 C C 2 C D	3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1	UMB 4 P2 4 ; 4 P3 H 4 P2 4 ; 4 P2 4 ; 4 ; 4 ; 4 ; 4 ; 5 ; 4 ; 4 ; 7 ; 7 ; 7 ; 8 ; 8 ; 8 ; 8 ; 8 ; 8 ; 8	5 5 5 P4	6 6 6	7 7 7 7 7 7 7	8 8 8 8 8	9 9 9 9 9	10 10 10 10 10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "2" 2: ANT "2" P4 0: Fixed P1 0: Fixed P2 0: Auto Notch "OFF" 1: Auto Notch "ON"
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Answer Read Answer BC Set Read Answer BC Set Read Answer	ANT 1 A 1 A 1 A 1 B 1 B 1 B 1 B 1 B 1 B 1 B	2 N 2 N 2 N C C C C C C C C C C C C C C	3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1	UMB 4 P2 4 ; 4 P2 P2 P3 P4 P4 P5	5 ; 5 P4 5 ; 5 5 ; 5 5 ; 5 5 ; 5 5 ; 5 5 ; 5 5 5 ; 5 5 5 ; 5 5 5 ; 5	6 6 6	7 7 7 7 7 7 7 7	8 8 8 8 8 8	9 9 9 9 9 9	10 10 10 10 10 10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "2" 2: ANT "2" P4 0: Fixed P1 0: Fixed P2 0: Auto Notch "OFF" 1: Auto Notch "ON"
Answer Read Answer BC Set Read Answer BD Set Read Answer	ANT 1	2 N 2 N 2 N 2 C 2 C C 2 C C 2 C C 2 C C 2 C C 2 C C 2 C C 2 C	3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1	UMB 4 P2 4 ; 4 P2 P2 P3 P4 P4 P5	5 ; 5 P4 5 ; 5 5 ; 5 5 ; 5 5 ; 5 5 ; 5 5 ; 5 5 5 ; 5 5 5 ; 5 5 5 ; 5	6 6 6	7 7 7 7 7 7 7 7	8 8 8 8 8 8	9 9 9 9 9 9	10 10 10 10 10 10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "2" 2: ANT "2" P4 0: Fixed P1 0: Fixed P2 0: Auto Notch "OFF" 1: Auto Notch "ON"
Answer Read Answer BC Set Read Answer BD Set Read Answer	ANT 1	2 N 2 N 2 N 2 C 2 C 2 C 2 C 2 C 2 C 2 C	3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1	UMB 4 P2 4 ; 4 P3 H 4 P2 4 ; 4 P2 4 ; 4 P2 4 ; 4 P2	5 5 5 7 5 7 5 5 5 5 5 5 5 5 5 5 5 5 5 5	6 6 6 6	7 7 7 7 7 7 7 7 7	8 8 8 8 8 8	9 9 9 9 9 9	10 10 10 10 10 10 10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "2" P4 0: Fixed P2 0: Auto Notch "OFF" 1: Auto Notch "ON" P1 0: Fixed P2 0: Fixed P3 0: Fixed P4 0: Fixed P5 0: Auto Notch "OFF" 1: Auto Notch "ON"
Answer Read Answer BC Set Read Answer BD Set Read Answer	ANT 1	2 N 2 N 2 N 2 C 2 C C 2 C 2 C 2 C 2 C 2	3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1	UMB 4 P2 4 ; 4 P3 H 4 P2 4 ; 4 P2 P2 P2 P3 P4	5 ; 5 P4 5 ; 5 5 ; 5 5 ; 5 5 ; 5 5 ; 5 5 ; 5 5 5 ; 5 5 5 ; 5 5 5 ; 5	6 6 6	7 7 7 7 7 7 7 7	8 8 8 8 8 8	9 9 9 9 9 9	10 10 10 10 10 10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "2" P4 0: Fixed P1 0: Fixed P2 0: Auto Notch "OFF" 1: Auto Notch "ON" P1 0: Fixed P2 0: Fixed P2 0: Auto Notch "ON"
Answer Read Answer BC Set Read Answer BD Set Read Answer	ANT 1	2 N 2 N 2 N 2 N C C 2 C C 2 C 2 C 1	3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1	UMB 4 P2 4 ; 4 P3 H 4 P2 4 ; 4 P2 4 ; 4 P2 4 ; 4 P2	5 5 5 P4	6 6 6 6	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	8 8 8 8 8 8 8	9 9 9 9 9 9	10 10 10 10 10 10 10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "2" P4 0: Fixed P2 0: Auto Notch "OFF" 1: Auto Notch "ON" P1 0: Fixed P2 0: Fixed P3 0: Fixed P4 0: Fixed P5 0: Auto Notch "OFF" 1: Auto Notch "ON"
Answer Read Answer BC Set Read Answer BD Set Read Answer	ANT 1	2 N 2 N 2 N 2 C 2 C C 2 C 2 C 2 C 2 C 2	3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1	UMB 4 P2 4 ; 4 P3 H 4 P2 4 ; 4 P2 P2 P2 P3 P4	5 5 5 7 5 7 5 5 5 5 5 5 5 5 5 5 5 5 5 5	6 6 6 6	7 7 7 7 7 7 7 7 7	8 8 8 8 8 8	9 9 9 9 9 9	10 10 10 10 10 10 10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "2" P4 0: Fixed P1 0: Fixed P2 0: Auto Notch "OFF" 1: Auto Notch "ON" P1 0: Fixed P1 0: Fixed
Answer Read Answer BC Set Read Answer BD Set Read Answer	ANT 1	2 N 2 N 2 N 2 N C C 2 C C 2 C 2 C 1	3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1	UMB 4 P2 4 ; 4 P3 H 4 P2 4 ; 4 P2 4 ; 4 P2 4 ; 4 P2 4 ; 4 P2 7 P2 P2 P3 P4 P4 P4 P4 P5 P4 P5 P5 P6 P6 P7	5 5 5 P4	6 6 6 6	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	8 8 8 8 8 8 8	9 9 9 9 9 9	10 10 10 10 10 10 10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "2" P4 0: Fixed P1 0: Fixed P2 0: Auto Notch "OFF" 1: Auto Notch "ON" P1 0: Fixed P1 0: Fixed
Answer Read Answer BC Set Read Answer BD Set Read Answer	ANT 1	2 N 2 N 2 N 2 N C C 2 C C C C 2 C C L C C C C C C C C C	3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1	UMB 4 P2 4 ; 4 P3 H 4 P2 4 ; 4 P2 4 ; 4 P2 4 ; 4 P2 4 ; 4 P2 7 P2 P2 P3 P4 P4 P4 P4 P5 P4 P5 P5 P6 P6 P7	5 5 5 P4	6 6 6 6	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	8 8 8 8 8 8 8	9 9 9 9 9 9	10 10 10 10 10 10 10	P2 1: ANT "1" 2: ANT "2" P3 1: ANT "2" P4 0: Fixed P1 0: Fixed P2 0: Auto Notch "OFF" 1: Auto Notch "ON" P1 0: Fixed P1 0: Fixed

BP MANUAL NOTCH

CONTROL COMMAND TABLES

	1000														
Set	1	2	3	4	5	6	7	8	9	10	P1	0: Fixed		P3	When P2=0
	В	Р	P1	P2	P3	P3	P3	;			P2		OTCH "ON/OFF"		000: OFF
Read	1	2	3	4	5	6	7	8	9	10]	1: Manual NO	OTCH LEVEL		001: ON When P2=1
	В	Р	P1	P2	;]				001 - 300 (NOTCH Frequency : x 10 Hz)
Answer	1	2	3	4	5	6	7	8	9	10	1				,
	В	Р	P1	P2	P3	P3	P3	;							
BS	BAI	ND S	ELEC	CT											
Set	1	2	3	4	5	6	7	8	9	10	P1	00: 1.8 MHz	06: 18 MHz		
	В	S	P1	P1	;]	01: 3.5 MHz	07: 21 MHz		
Read	1	2	3	4	5	6	7	8	9	10	1	03: 7 MHz 04: 10 MHz	08: 24.5 MHz 09: 28 MHz		
]	05: 14 MHz	10: 50 MHz		
Anguer								_	_		1		44 051		
Answer	1	2	3	4	5	6	7	8	9	10			11: GEN		

BU	BAN	ND U	Р									
Set	1	2	3	4	5	6	7	8	9	10	P1 0: Fix	xed
	В	U	P1	;								
Read	1	2	3	4	5	6	7	8	9	10		
Answer	1	2	3	4	5	6	7	8	9	10		
7 4100001	<u> </u>		3		-	-	-	-		10		

BY	BUS	SY										
Set	1	2	3	4	5	6	7	8	9	10	P1	
]_,	1: BUSY "ON"
Read	1	2	3	4	5	6	7	8	9	10] P2	2 0: Fixed
	В	Υ	;]	
Answer	1	2	3	4	5	6	7	8	9	10	1	
	В	Υ	P1	P2	;						1	

CH Set	CH/	ANNE	EL UI	P/DO	WN							
Set	1	2	3	4	5	6	7	8	9	10	P1	0: Memory Channel "UP"
	С	Н	P1	;								1: Memory Channel "DOWN"
Read	1	2	3	4	5	6	7	8	9	10]	
Answer	1	2	3	4	5	6	7	8	9	10		

CN	СТС	CSS T	TONE	E FR	EQU	ENC	Υ					
Set	1	2	3	4	5	6	7	8	9	10	P1	0: Fixed
	С	N	P1	P2	P2	;					P2	00 - 49: Tone Frequency Number (See Table Below)
Read	1	2	3	4	5	6	7	8	9	10	1	
	С	N	P1	;]	
Answer	1	2	3	4	5	6	7	8	9	10]	
	С	N	P1	P2	P2	;					1	

CO	COI	NTO	JR								
Set	1	2	3	4	5	6	7	8	9	10	P1 0: Fixed P3 When P2=0,
	С	0	P1	P2	P3	P3	;				P2 0: CONTOUR "ON/OFF" 000: CONTOUR "OFF"
Read	1	2	3	4	5	6	7	8	9	10	1: CONTOUR LEVEL 001: CONTOUR "ON" When P2=1,
	С	0	P1	P2	;						01 - 30 (CONTOUR Frequency)
Answer	1	2	3	4	5	6	7	8	9	10	(
	С	0	P1	P2	P3	Р3	:				

CS	CW	SPC	T									
Set	1	2	3	4	5	6	7	8	9	10	P1	0: OFF
	С	S	P1	;								1: ON
Read	1	2	3	4	5	6	7	8	9	10		
	С	S	;								1	
Answer	1	2	3	4	5	6	7	8	9	10	1	
	С	S	P1	;								

TABLE

	CTCSS TONE CHART														
00	67.0 Hz	09	91.5 Hz	18	123.0 Hz	27	162.2 Hz	36	189.9 Hz	45	229.1 Hz				
01	69.3 Hz	10	94.8 Hz	19	127.3 Hz	28	165.5 Hz	37	192.8 Hz	46	233.6 Hz				
02	71.9 Hz	11	97.4 Hz	20	131.8 Hz	29	167.9 Hz	38	196.6 Hz	47	241.8 Hz				
03	74.4 Hz	12	100.0 Hz	21	136.5 Hz	30	171.3 Hz	39	199.5 Hz	48	250.3 Hz				
04	77.0 Hz	13	103.5 Hz	22	141.3 Hz	31	173.8 Hz	40	203.5 Hz	49	254.1 Hz				
05	79.7 Hz	14	107.2 Hz	23	146.2 Hz	32	177.3 Hz	41	206.5 Hz	_	_				
06	82.5 Hz	15	110.9 Hz	24	151.4 Hz	33	179.9 Hz	42	210.7 Hz	_	_				
07	85.4 Hz	16	114.8 Hz	25	156.7 Hz	34	183.5 Hz	43	218.1 Hz	_	_				
08	88.5 Hz	17	118.8 Hz	26	159.8 Hz	35	186.2 Hz	44	225.7 Hz	_	_				

CONTROL COMMAND TABLES

CTCSS

Answer

2 3

D P P1

Set	1	2	3	4	5	6	7	8	9	10	P1 0: Fixed						
	С	Т	P1	P2	;						P2 0: CTCSS "OFF"						
Read	1	2	3	4	5	6	7	8	9	10	1: CTCSS ENC/DEC "ON" 2: CTCSS ENC "ON"						
	С	Т	P1	;							2. C1C33 ENC ON						
Answer	1	2	3	4	5	6	7	8	9	10]						
	С	Т	P1	P2	;												
-	l DIII																
DA	שוט	IMEF	Ť	_					_	_							
Set	1	2	3	4	5	6	7	8	9	10	P1 00 - 15: Backlight Brightness Level						
	D	Α	P1	P1	P2	P2	;				P2 00: Fixed						
Read	1	2	3	4	5	6	7	8	9	10							
	D	Α	;														
Answer	1	2	3	4	5	6	7	8	9	10	10						
	D	Α	P1	P1	P2	P2	;										
DN	MIC	: DW	'NI														
Set	IVIIC	2	3	4	5	6	7	8	9	10							
Set	D	N		4	5	0	/	·	9	10	-						
Read	-		,		5		_			40	-						
Reau	1	2	3	4	5	6	7	8	9	10	-						
Answer	1	2	3	4	5	6	7	8	9	10	-						
Allowei	<u> </u>	2	3	4	5	0	/	l °	9	10	-						
DP	DIS	PLA'	Y														
Set	1	2	3	4	5	6	7	8	9	10	P1 0: World Clock Display						
	D	Р	P1	;							1: Band Scope Display not activates when the						
Read	1	2	3	4	5	6	7	8	9		2: AF Oscilloscope/Spectrum Analyzer Display optional DMU-200						
	D	Р	:							3: Log Book Display Data Managemnt 4: Temperature/SWR Display is not attached.							
Angwor	1	-	,	4	-		7										

ED	ENC	CORI	DER	DOV	VN							
Set	1	2	3	4	5	6	7	8	9	10		0: MAIN DIAL Knob
	Е	D	P1	P2	P2	;						1: CLAR/VFO-B Knob
Read	1	2	3	4	5	6	7	8	9	10		2: SELECT Knob 01-99: Steps
											' -	01-99. Gleps
Answer	1	2	3	4	5	6	7	8	9	10		
											1	

8 9 10 5: Rotator Display 6: Memory Channel List Display

EK	ENT	Γ KE	′							
Set	1	2	3	4	5	6	7	8	9	10
	Е	K	;							
Read	1	2	3	4	5	6	7	8	9	10
Answer	1	2	3	4	5	6	7	8	9	10

EU	ENG	CORI	DER	UP							
Set	1	2	3	4	5	6	7	8	9	10	P1 0: MAIN DIAL Knob
	Е	U	P1	P2	P2	;					1: CLAR/VFO-B Knob
Read	1	2	3	4	5	6	7	8	9	10	2: SELECT Knob P2 01-99: Steps
											1 2 01 00. Otop5
Answer	1	2	3	4	5	6	7	8	9	10	

CONTROL COMMAND TABLES

EX	MEI	NU									
Set	1	2	3	4	5	6	7	8	nn	**	P1 : 001-118 (MENU Number)
	Е	Х	P1	P1	P1	P2	P2	~	P2	;	P2 : Parameter (See Table 2 and Table 3)
Read	1	2	3	4	5	6	7	8	9	10	
	Е	Х	P1	P1	P1	;					
Answer	1	2	3	4	5	6	7	8	nn	**	
	Е	Х	P1	P1	P1	P2	P2	~	P2	;	

TABLE 2

		Table 2
P1	FUNCTION	P2
001	AGC FAST DELAY TIME	0020 ~ 4000 msec (20 msec/step)
002	AGC MID DELAY TIME	0020 ~ 4000 msec (20 msec/step)
003	AGC SLOW DELAY TIME	0020 ~ 4000 msec (20 msec/step)
004	DISPLAY COLOR DISPLAY DIMMER	0: COOL BLUE 1: CONTRAST BLUE 2: FLASH BLUE 3: CONTRAST UMBER 4: UMBER 00 ~ 15
006	TUNING OFFSET INDICATOR	0: CLARIFIER OFFSET 1: CW TUNIG METER 2: VRF PEAK POSITION
007	S-METER PEAK HOLD	0: OFF 1: 0.5 sec 2: 1.0 sec 3: 2.0 sec
008	PO METER PEAK HOLD	0: OFF 1: 0.5 sec 2: 1.0 sec 3: 2.0 sec
009	ALC METER PEAK HOLD	0: OFF 1: 0.5 sec 2: 1.0 sec 3: 2.0 sec
010	ID METER PEAK HOLD	0: OFF 1: 0.5 sec 2: 1.0 sec 3: 2.0 sec
011	ROTATOR STARTING POINT	0: 0° 1: 90° 2: 180° 3: 270°
012	ROTATOR NEEDLE PRECISELY	00 ~ 30° (0 ~ -30°, 2° step)
013	QMB MAKER VOICE MEMORY AUDIO (DVS-6) OUTPUT LEVEL	0: OFF 1: ON 000 ~ 100
015	VOICE MEMORY AUDIO (DVS-6) TX LEVEL	000 ~ 100
016	CW BEACON	000 (OFF) ~ 255 sec
017	CONTEST NUMBER STYLE	0: 1290
018	CONTEST NUMBER	0000 ~ 9999
019	CW MEMORY "1" MEMORY TYPE	0: TEXT MEMORY 1: MESSAGE MEMORY
020	CW MEMORY "2" MEMORY TYPE	0: TEXT MEMORY 1: MESSAGE MEMORY
021	CW MEMORY "3" MEMORY TYPE CW MEMORY "4" MEMORY TYPE	0: TEXT MEMORY 1: MESSAGE MEMORY 0: TEXT MEMORY 1: MESSAGE MEMORY
022	CW MEMORY 4 MEMORY TYPE CW MEMORY "5" MEMORY TYPE	0: TEXT MEMORY 1: MESSAGE MEMORY 0: TEXT MEMORY 1: MESSAGE MEMORY
024	ANTENNA SELECTION MODE	0: BAND 1: STACK
025	BEEP LEVEL	000 ~ 100
026	CAT BAUD RATE	0: 4800 bps 1: 9600 bps 2: 19200 bps 3: 38400 bps
027	CAT TIME-OUT TIMER	0: 10 msec 1: 100 msec 2: 1000 msec 3: 3000 msec
028	CAT RTS PORT	0: OFF 1: ON
029	MEMORY GROUP	0: OFF 1: ON
030	QUICK SPLIT TUNING OFFSET TX TIME OUT TIMER	-20 ~ +00 (or -00) ~ +20 kHz
032	μ-TUNE DIAL	0: STEP-2 1: STEP-1
033	MIC SCAN	0: OFF 1: ON
034	SCAN RESUME	0 PAUSE 1: TIME
035	FREQUENCY ADJUST	-25 ~ +00 (or -00) ~ +25
036	AM MIC GAIN	1000: MIC KNOB 0000 ~ 0100 (FIX)
037	FRONT PANEL KEY JACK TYPE FRONT PANEL KEY JACK WIRING	0: OFF 1: BUG 2: IAMBIC KEYER W/O ACS 3: IAMBIC KEYER W/ACS 0: NORNAL 1: REVERSE
038	REAR PANEL KEY JACK TYPE	0: OFF 1: BUG 2: IAMBIC KEYER W/O ACS 3: IAMBIC KEYER W/ACS
040	REAR PANEL KEY JACK WIRING	0: NORNAL 1: REVERSE
041	CW AUTO MODE	0: OFF 1: 50 MHz ONLY 2: ON
042	CW BFO INJECTION SIDE	0: USB 1: LSB 2: AUTO
043	CW BREAK-IN MODE	0: SEMI BREAK-IN 1: FULL BREAK-IN
044	CW BREAK-IN DELAY TIME	0030 ~ 3000 msec (10 msec/step)
045	CW PITCH FREQUENCY	00: 300 Hz, 01: 350 Hz, 02: 400 Hz, 03: 450 Hz, 04: 500 Hz, 05: 550 Hz 06: 600 Hz, 07: 650 Hz, 08: 700 Hz, 09: 750 Hz, 10: 800 Hz, 11: 850 Hz
		06: 600 Hz, 07: 650 Hz, 08: 700 Hz, 09: 750 Hz, 10: 800 Hz, 11: 850 Hz 12: 900 Hz, 13: 950 Hz, 14: 1000 Hz, 15: 1050 Hz
046	CW WEIGHT	25 (1:2.5) ~ 45 (1:4.5)
047	CW FREQUENCY DISPLAY	0: DIRECT FREQUENCY 1: PITCH OFFSET
048	CW PC KEYING	0: OFF 1: ON
049	CW QSK TIME	0: 15 msec 1: 20 msec 2: 25 mesc 3: 30 msec
050	DATA MODE TX GAIN	000 ~ 100
051	DATA MODE OUTPUT LEVEL DATA MODE VOX DELAY TIME	000 ~ 100 0030 ~ 3000 msec (10 msec/step)
052 053	DATA MODE VOX DELAY TIME DATA MODE VOX GAIN	0030 ~ 3000 msec (10 msec/step)
053	PACKET MODE FREQUENCY DISPLAY OFFSET	-3000 ~ +0000 (or -0000) ~ +3000 Hz (10 Hz/step)
055	PACKET MODE CARRIER POINT FREQUENCY	-3000 ~ +0000 (or -0000) ~ +3000 Hz (10 Hz/step)
056	FM MIC GAIN	1000: MIC KNOB 0000 ~ 0100 (FIX)
057	28 MHz REPEATER SHIFT	0000 ~ 1000 kHz (10 kHz/step)
058	50 MHz REPEATER SHIFT	0000 ~ 4000 kHz (10 kHz/step)
059	RTTY MODE RX POLARITY (MARK/SPACE)	0: NORNAL 1: REVERSE
060 061	RTTY MODE TX POLARITY (MARK/SPACE) RTTY MODE DATA OUTPUT LEVEL	0: NORNAL 1: REVERSE 000 ~ 100
062	RTTY MODE SHIFT FREQUENCY	1: 170 Hz 1: 200 Hz 2: 425 Hz 3: 850 Hz
063	RTTY MODE MARK FREQUENCY	1: 1275 Hz 2: 2125 Hz
064	SSB MODE TX BPF BANDWIDTH	0: 100 - 3000 Hz
065	LSB CARRIER POINT	-200 ~ +000 (or -000) ~ +200 Hz (10 Hz/step)
065 066	USB CARRIER POINT	−200 ~ +000 (or −000) ~ +200 Hz (10 Hz/step)
065 066 067	USB CARRIER POINT NB LEVEL (NARROW)	-200 ~ +000 (or -000) ~ +200 Hz (10 Hz/step) 000 ~ 255
065 066 067 068	USB CARRIER POINT NB LEVEL (NARROW) NB LEVEL (WIDE)	-200 ~ +000 (or -000) ~ +200 Hz (10 Hz/step) 000 ~ 255 000 ~ 255
065 066 067 068 069	USB CARRIER POINT NB LEVEL (NARROW) NB LEVEL (WIDE) CONTOUR GAIN	-200 ~ +000 (or -000) ~ +200 Hz (10 Hz/step) 000 ~ 255 000 ~ 255 -40 ~ +00 (or -00) ~ +20 dB
065 066 067 068 069 070	USB CARRIER POINT NB LEVEL (NARROW) NB LEVEL (WIDE) CONTOUR GAIN CONTOUR WIDTH	-200 ~ +000 (or -000) ~ +200 Hz (10 Hz/step) 000 ~ 255 000 ~ 255 -40 ~ +00 (or -00) ~ +20 dB 01 ~ 11
065 066 067 068 069	USB CARRIER POINT NB LEVEL (NARROW) NB LEVEL (WIDE) CONTOUR GAIN	-200 ~ +000 (or -000) ~ +200 Hz (10 Hz/step) 000 ~ 255 000 ~ 255 -40 ~ +00 (or -00) ~ +20 dB

CONTROL COMMAND TABLES

TABLE 3

		TABLE 3
P1	FUNCTION	P2
073	SPECTRUM SCOPE SCAN START FREQUENCY (1.8 MHz)	01800 ~ 01999 (1.800 MHz ~ 1.999 MHz)
074	SPECTRUM SCOPE SCAN START FREQUENCY (3.5 MHz)	03500 ~ 03999 (3.500 MHz ~ 3.999 MHz)
075	SPECTRUM SCOPE SCAN START FREQUENCY (5.0 MHz)	05250 ~ 05499 (5.250 MHz ~ 5.499 MHz)
076	SPECTRUM SCOPE SCAN START FREQUENCY (7.0 MHz)	07000 ~ 07299 (7.000 MHz ~ 7.299 MHz)
077	SPECTRUM SCOPE SCAN START FREQUENCY (10 MHz)	10100 ~ 10149 (10.100 MHz ~ 10.149 MHz)
078	SPECTRUM SCOPE SCAN START FREQUENCY (14 MHz)	14000 ~ 14349 (14.000 MHz ~ 14.349 MHz)
079	SPECTRUM SCOPE SCAN START FREQUENCY (18 MHz)	18000 ~ 18199 (18.000 MHz ~ 18.199 MHz
080	SPECTRUM SCOPE SCAN START FREQUENCY (21 MHz)	21000 ~ 21449 (21.000 MHz ~ 21.449 MHz)
081	SPECTRUM SCOPE SCAN START FREQUENCY (24.5 MHz)	24800 ~ 24989 (24.800 MHz ~ 24.989 MHz)
082	SPECTRUM SCOPE SCAN START FREQUENCY (28 MHz)	28000 ~ 29699 (28.000 MHz ~ 29.699 MHz)
083	SPECTRUM SCOPE SCAN START FREQUENCY (50 MHz)	50000 ~ 53999 (50.000 MHz ~ 53.999 MHz)
084	MAIN TUNING DIAL KNOB DIALSTEP	0: 1 Hz 1: 5 Hz 2: 10 Hz
085	MAIN TUNING DIAL KNOB CW FINE TUNING	0: OFF 1: ON
086	CLAR/VFO-B KNOB MHz STEP	0: 0.1 MHz 1: MHz
087	MICROPHNE [UP]/[DOWN] KEY AM STEP	0: 2.5 kHz
088	MICROPHNE [UP]/[DOWN] KEY FM STEP	0: 5 kHz 1: 6.25 kHz 2: 10 kHz 3: 12.5 kHz 4: 20 kHz 5: 25 kHz
089	MAIN TUNING DIAL KNOB DIALSTEP (FM MODE)	0: 10 Hz 1: 100 Hz
090	MY BAND SELECT	0: OFF 1: ON
		P2(6): 1.8 MHz
		P2(11): 14 MHz P2(12): 18 MHz P2(13): 21 MHz P2(14): 24.5 MHz P2(15): 28 MHz
		P2(16): 50 MHz
004	AND FOLLAGUIZED OFFIZED EDECLIFICATION (LOW DANIOS)	Example: P2 = 110101010100 (My Band = 1.8/3.5/7/14/21/28/50 MHz)
091	MIC EQUAQLIZER CENTER FREQUENCY (LOW RANGE)	00: OFF
092	MIC EQUAQLIZER GAIN (LOW RANGE)	05: 500 Hz 06: 600 Hz 07: 700 Hz -10 ~ +00 (or -00) ~ +10
=	MIC EQUAQLIZER GAIN (LOW RANGE) MIC EQUAQLIZER BANDWIDTH (LOW RANGE)	
093	MIC EQUAQLIZER BANDWIDTH (LOW RANGE) MIC EQUAQLIZER CENTER FREQUENCY (MID RANGE)	1 ~ 10 00: OFF
094	WIC EQUAGEZEN CENTENT NEQUENCT (WID NAME)	05: 1100 Hz 06: 1200 Hz 07: 1300 Hz 08: 1400 Hz 09: 1500 Hz
095	MIC EQUAQLIZER GAIN (MID RANGE)	-10 ~ +00 (or -00) ~ +10
096	MIC EQUAQLIZER BANDWIDTH (MID RANGE)	01 ~ 10
097	MIC EQUAQLIZER CENTER FREQUENCY (HIGH RANGE)	00: OFF
	, , , , , , , , , , , , , , , , , , , ,	06: 2000 Hz 07: 2100 Hz 08: 2200 Hz 09: 2300 Hz 10: 2400 Hz 11: 2500 Hz
		12: 2600 Hz 13: 2700 Hz 14: 2800 Hz 15: 2900 Hz 16: 3000 Hz 17: 3100 Hz
		18: 3200 Hz
098	MIC EQUAQLIZER GAIN (HIGH RANGE)	-10 ~ +00 (or -00) ~ +10
099	MIC EQUAQLIZER BANDWIDTH (HIGH RANGE)	01 ~ 10
100	SPEECH PROCESSOR EQUAQLIZER CENTER FREQUENCY	00: OFF 01: 100 Hz 02: 200 Hz 03: 300 Hz 04: 400 Hz
\perp	(LOW RANGE)	05: 500 Hz 06: 600 Hz 07: 700 Hz
101	SPEECH PROCESSOR EQUAQLIZER GAIN (LOW RANGE)	-10 ~ +00 (or -00) ~ +10
102	SPEECH PROCESSOR EQUAQLIZER BANDWIDTH	1 ~ 10
	(LOW RANGE)	
103	SPEECH PROCESSOR EQUAQLIZER CENTER FREQUENCY	00: OFF
	(MID RANGE)	05: 1100 Hz 06: 1200 Hz 07: 1300 Hz 08: 1400 Hz 09: 1500 Hz
104	SPEECH PROCESSOR EQUAQLIZER GAIN (MID RANGE)	-10 ~ +00 (or -00) ~ +10
105	SPEECH PROCESSOR EQUAQLIZER BANDWIDTH	01 ~ 10
106	(MID RANGE)	00: OFF
100	SPEECH PROCESSOR EQUAQLIZER CENTER FREQUENCY (HIGH RANGE)	06: 2000 Hz 07: 2100 Hz 08: 2200 Hz 09: 2300 Hz 10: 2400 Hz 11: 2500 Hz
	(HIGHTANGE)	12: 2600 Hz 13: 2700 Hz 14: 2800 Hz 15: 2900 Hz 16: 3000 Hz 17: 3100 Hz
		18: 3200 Hz
107	SPEECH PROCESSOR EQUAQLIZER GAIN (HIGH RANGE)	-10 ~ +00 (or -00) ~ +10
107	SPEECH PROCESSOR EQUAQLIZER BANDWIDTH	01 ~ 10
'''	(HIGH RANGE)	
109	SPEECH PROCESSOR COMPRESSION LEVEL	000 ~ 100
110	ANTENNA TUNER SELECT	0: INTERNAL TUNER 1: EXTERNAL (FC-40) TUNER
111	TRANSMITTER OUTPUT POWER	005 ~ 100
112	AM CARRIER LEVEL	000 ~ 100
113	TX POWER CONTROL	0: ALL MODE 1: CARRIER
114	VOX OPERATION	0: MIC INPUT 1: DATA INPUT
115	VOX GAIN	000 ~ 100
116	VOX DELAY TIME	0030 ~ 3000 msec (10 msec/step)
117	VOX ANTI-TRIP GAIN	000 ~ 100
118	EMERGENCY CHANNEL	0: DISABLE 1: ENABLE

EA	EDE	OHE	-NICY	/ \/E	^						
FA				/ VF							
Set	1	2	3	4	5	6	7	8	9	10	P1 0030000 - 56000000 (Hz)
	F	Α	P1	P1	P1	P1	P1	P1	P1	P1	
	11	12	13	14	15	16	17	18	19	20	
	H:-	12	13	14	13	10	17	10	19	20	
	,										
Read	1	2	3	4	5	6	7	8	9	10	
	F	Α									
Answer	1	2	3	4	5	6	7	8	9	10	
Allswei	-				_				_		
	F	Α	P1	P1	P1	P1	P1	P1	P1	P1	
	11	12	13	14	15	16	17	18	19	20	
	,										
FB	EDE		NC)	/ VF) D						
Set	1	2	3	4	5	6	7	8	9	10	P1 0030000 - 56000000 (Hz)
	F	В	P1	P1	P1	P1	P1	P1	P1	P1	
	11	12	13	14	15	16	17	18	19	20	
	-			1-7	10	10		10	10		
<u> </u>	P1	P1	P1	<u>;</u>						_	
Read	1	2	3	4	5	6	7	8	9	10	
	F	В									
Answer	 		3	4	-	6	7	8	0	10	
Allowel	1	2		4	5	6			9		
	F	В	P1	P1	P1	P1	P1	P1	P1	P1	
1	11	12	13	14	15	16	17	18	19	20	
1	P1	P1	P1								
	111		1 1	,							
FK	FIIN	CTI	ON K	(FV							
	_				-	_	-	_	_	40	D4 4. 54 /[4.0(4)]) here
Set	1	2	3	4	5	6	7	8	9	10	P1 1: F1 ([1.8(1)]) key
	F	K	P1	;							2: F2 ([3.5(2)]) key
Read	1	2	3	4	5	6	7	8	9	10	3: F3 ([7(3)]) key
11000	H			-	ا	_	L'		-	-10	4: F4 ([10(4)]) key
	\vdash										5: F5 ([14(5)]) key
Answer	1	2	3	4	5	6	7	8	9	10	6: F6 ([18(6)]) key
											7: F7 ([21(7)]) key
											·
FR	FIIN	CTI	ON F	Y							
					-	_	_			10	D4 0: \/FO A: DV
Set	1	2	3	4	5	6	7	8	9	P1 0: VFO-A: RX, VFO-B: "OFF" 1: VFO-A: Mute, VFO-B: "OFF"	
	F	R	P1	;							1: VFO-A: Mute, VFO-B: "OFF" 4: VFO-A): "OFF", VFO-B: RX
Read	1	2	3	4	5	6	7	8	9	10	4: VFO-A): "OFF", VFO-B: RX 5: VFO-A: "OFF", VFO-B: Mute
11000	F			-	ļ -	_	<u>'</u>	_	_	-10	O. VI O A. OIT , VI O B. Mule
L		R	,								
Answer	1	2	3	4	5	6	7	8	9	10	
	F	R	P1	;							
FS	FAS	T S1	ΈP								
Set	1	2	3	4	5	6	7	8	9	10	P1 0: FAST Key "OFF"
1 261					3	0		٥	9	10	1: FAST Key "ON"
	F	S	P1	;							1. TAST REY ON
Read	1	2	3	4	5	6	7	8	9	10	
	F	S	:								
Anguer	1	2	3	4	5	6	7	8	9	10	
Answer	-				5	ь	/	8	9	10	
	F	<u>s</u>	P1	;							<u> </u>
FT	FUN	CTI	T NC	X							
Set	1	2	3	4	5	6	7	8	9	10	P1 0: VFO-A: TX/RX (Toggle)
1	F	T	P1		Ė	<u> </u>	Ė	_	Ė	Ť	1: VFO-B: TX/RX (Toggle)
Desid	_			,	-	-	_	-	-		2: VFO-A: TX
Read	1	2	3	4	5	6	7	8	9	10	3: VFO-B: TX
	F	Т	;	L		L			L	L	P2 0: VFO-A: TX
Answer	1	2	3	4	5	6	7	8	9	10	1: VFO-B: TX
	F		P2	-	Ť	Ť	i i	Ť	Ť	٠,٠	
	Г	<u>T</u>	Ľ	٠,		<u> </u>			<u> </u>		<u> </u>
CT	100	` E ! !	NOT	1011							
GT			NCT	ION							
Set	1	2	3	4	5	6	7	8	9	10	P1 0: Fixed P3 0: AGC "OFF"
I	G	Т	P1	P2	:						P2 0: AGC "OFF" 1: AGC "FAST"
Read	1	2	3	4	5	6	7	8	9	10	1: AGC "FAST" 2: AGC "MID"
I TOOL	-				-	0		0	٦	10	2: AGC "MID" 3: AGC "SLOW"
	G	<u>T</u>	P1	;							3: AGC "SLOW" 4: AGC "AUTO-FAST"
Answer	1	2	3	4	5	6	7	8	9	10	4: AGC "AUTO" 5: AGC "AUTO-MID"
1	G	Т	P1	P3							6: AGC "AUTO-SLOW"
		-			. ,						
ID	IDE	NTIE	ICAT	ION							
						-		-	-		[D4 0040 /F: 4 4 4 2
Set	1	2	3	4	5	6	7	8	9	10	P1 0310 (Fixed value)
	L			L		L	L	L	L	L	
Read	1	2	3	4	5	6	7	8	9	10	
	-		•	-	Ť	Ť	<u> </u>	Ť	Ť	<u> </u>	
		D	,	_			_			_	
	1 4 1	2	3	4	5	6	7	8	9	10	
Answer	1										1
Answer	I	D	P1	P1	P1	P1	;				

IF	INF	ORM	ATIC	ON								
Set	1	2	3	4	5	6	7	8	9	10	P1	000-117 (Memory Channel) P2 VFO-A Frequency (Hz)
												Clarifier Direction +: Plus Shift, -: Minus Shift
Read	1	2	3	4	5	6	7	8	9	10	l	Clarifier Offset: 0000 - 9999 (Hz)
	\vdash	F	:			_	<u> </u>		_			0: RX CLAR "OFF" 1: RX CLAR "ON" 0: TX CLAR "OFF" 1: TX CLAR "ON"
Answer	1	2	3	4	5	6	7	8	9	10		MODE 1: LSB 2: USB 3: CW 4: FM 5: AM 6: FSK (RTTY-LSB)
7 1101101	H	F	P1	P1	P1	P2	P2	P2	P2	P2	` ~	7: CW-R 8: PKT-L 9: FSK-R (RTTY-USB) A: PKT-FM
	11	12	13	14	15	16	17	18	19	20	1	B: FM-N C: PKT-U
	P2	P2	P2	P3	P3	P3	P3	P3	P4	P5		0: VFO 1: Memory 2: Memory Tune 3: Quick Memory Bank (QMB) 4: QMB-MT
	21	22	23	24	25	26	27	28	29	30		0: CTCSS "OFF" 1: CTCSS ENC/DEC 2: CTCSS ENC Tone Number (See Table 1)
	P6	P7	P8	P9	_	P10	_	20	29	30		0: Simplex 1: Plus Shift 2: Minus Shift
	FU	Γ/	ГО	F9	F9	F 10	,					
IS	IF-S	HIFT	Г									
Set	1	2	3	4	5	6	7	8	9	10	P1	0: Fixed
	ı	S	P1	-/+	P2	P2	P2	P2	:		P2	-1000 ~ +1000 Hz
Read	1	2	3	4	5	6	7	8	9	10	1	
	Т	S	P1								1	
Answer	1	2	3	4	5	6	7	8	9	10	1	
	\vdash	S	P1	-/+	P2	P2		P2	÷		1	
					1 2	1 2		1 2	,			
KM	KEY	/ER	MEN	IORY	′							
Set	1	2	3	4	5	6	7	~	53	**		1 - 5 : Keyer Memory Channel Number
	K	М	P1	P2	P2	P2	P2	~	P2	;	P2	Message Characters (up to 50 characters)
Read	1	2	3	4	5	6	7	8	9	10	1	
	к	М	P1	1;							1	
Answer	1	2	3	4	5	6	7	~	53	**	1	
	K	М	P1	P2	P2	P2	P2	~	P2	:	1	
										,		
KP	KEY	/ PIT	СН									
Set	1	2	3	4	5	6	7	8	9	10	P1	00: 300 Hz 07: 650 Hz 14: 1000 Hz
1	K	Р	P1	P1	;							01: 350 Hz
Read	1	2	3	4	5	6	7	8	9	10	1	02: 400 Hz
	K	Р	:								1	03: 450 Hz
Answer	1	2	3	4	5	6	7	8	9	10	1	05: 550 Hz 12: 900 Hz
	K	Р	P1	P1	;						1	06: 600 Hz 13: 950 Hz
KR	KE	/ER										
Set	1	2	3	4	5	6	7	8	9	10	P1	0: KEYER "OFF"
	K	R	P1	;								1: KEYER "ON"
Read	1	2	3	4	5	6	7	8	9	10		
	K	R	;									
Answer	1	2	3	4	5	6	7	8	9	10		
	K	R	P1	;							1	
KS		/ SPI		_							_	
Set	_	2		4	5	6	7	8	9	10	P1	004 - 060 (WPM)
L	K	S	P1	P1	P1	;						
Read	1	2	3	4	5	6	7	8	9	10		
	K	S	;									
Answer	1	2	3	4	5	6	7	8	9	10		
	K	S	P1	P1	P1	;						
1074	011	VE	111.0									
KY		KEY									l a :	4.17
Set	1	2	3	4	5	6	7	8	9	10	P1	1: Keyer Memory "1" Playback 6: Message Keyer "1" Playback 7: Message Keyer "2" Playback 7: Message Keyer "2" Playback
<u> </u>	K	Υ	P1	;		<u> </u>	<u> </u>					2: Keyer Memory "2" Playback 7: Message Keyer "2" Playback 3: Keyer Memory "3" Playback 8: Message Keyer "3" Playback
Read	1	2	3	4	5	6	7	8	9	10		4: Keyer Memory "4" Playback 9: Message Keyer "4" Playback
<u> </u>	<u> </u>											5: Keyer Memory "5" Playback A: Message Keyer "5" Playback
Answer	1	2	3	4	5	6	7	8	9	10		
1 1/	101											
LK	LOC				-		_		-	4.5	D :	0 DIAL L
Set	1	2	3	4	5	6	7	8	9	10	P1	0: DIAL Lock "OFF" 1: DIAL Lock "ON"
	L	K	P1	;		_						I. DIAL LUCK OIN
Read	1	2	3	4	5	6	7	8	9	10		
L	L	K	;									
Answer	1	2	3	4	5	6	7	8	9	10		
	L	K	P1	;								

LM	LO	AD M	ESS	EGE								
Set	1	2	3	4	5	6	7	8	9	10	P1	0: Fixed
	L	М	P1	P2	;						P2	0: DVS-6 (Recording Stop)
Read	1	2	3	4	5	6	7	8	9	10]	1: DVS-6 (CH "1" Recording Start/Stop) 2: DVS-6 (CH "2" Recording Start/Stop)
	L	М	P1	;								3: DVS-6 (CH "3" Recording Start/Stop) *: This command does not activates
Answer	1	2	3	4	5	6	7	8	9	10]	4: DVS-6 (CH "4" Recording Start/Stop) when the optional DVS-6 Voice
	L	М	P1	P2	;							5: DVS-6 (CH "5" Recording Start/Stop) Memory Unit is not installed.

MA	MEI	MOR	Y CH	ANN	IEL T	O VI	FO-A			
Set	1	2	3	4	5	6	7	8	9	10
	М	Α	,							
Read	1	2	3	4	5	6	7	8	9	10
Answer	1	2	3	4	5	6	7	8	9	10

MC	ME	MOR	Y CH	IANN	IEL						
Set	1	2	3	4	5	6	7	8	9	10	P1 000 - 117: Memory Channel Number
	М	C	P1	P1	P1	;					000 - 099: Regular Memory Channel
Read	1	2	3	4	5	6	100: P1L 101: P1U				
	М	С	;								101. F 10
Answer	1	2	3	4	5	6	7	8	9	10	116: P9L
	М	C	P1	P1	P1	;					117: P9U

MD	OPE	ERAT	ING	MOE	DΕ							OPERATING MODE														
Set	1	2	3	4	5	6	7	8	9			0: Fixed														
	M	D	P1	P2	;						P2 I			3: CW 4: FM 5: AM												
Read	1	2	3	4	5	6	7	8	9	10			8: PKT-L C: PKT-U	9: FSK-R (RTTY-USB)	A: PKT-FM											
	М	D	P1	• ;								D. 1 W 14	0.1101	D.7WiTY												
Answer	1	2	3	4	5	6	7	8	9	10																
	M	D	P1	P2	;																					

ИG	MIC	GAI	N							
Set	1	2	3	4	5	6	7	8	9	10
	М	G	P1	P1	P1	;				
Read	1	2	3	4	5	6	7	8	9	10
	М	G	;							
Answer	1	2	3	4	5	6	7	8	9	10
	М	G	P1	P1	P1	;				

MK	MOI	DE K	ΈY								
Set	1	2	3	4	5	6	7	8	9	10	P1 0: SSB key
	М	K	P1	;							1: SSB key
Read	1	2	3	4	5	6	7	8	9	10	2: CW key 3: AM/FM key
											4: AM/FM key
Answer	1	2	3	4	5	6	7	8	9	10	5: RTTY/PKT key
											6: RTTY/PKT key

ML	MOI	NITO	R LE	VEL							
Set	1	2	3	4	5	6	7	8	9	10	
	М	L	P1	P2	P2	P2	;				1: MONI Level
Read	1	2	3	4	5	6	7	8	9	10	P2 When P1=0 - 000: MONI "OFF"
	М	L	P1	;							001: MONI "OFF 001: MONI "ON"
Answer	1	2	3	4	5	6	7	8	9	10	
	М	L	P1	P2	P2	P2	;				001 - 255

MR	MEI	MOR	Y CH	IANN	IEL F	READ)				
Set	1	2	3	4	5	6	7	8	9	10	P1 Memory Channel Number P2 Memory Channel Frequency (Hz)
											P3 Clarifier Direction +: Plus Shift, -: Minus Shift
Read	1	2	3	4	5	6	7	8	9	10	Clarifier Offset: 0000 - 9999 (Hz) P4 0: RX CLAR "OFF" 1: RX CLAR "ON"
	М	R	P1	P1	P1	;					P5 0:TX CLAR "OFF" 1: TX CLAR "ON"
Answer	1	2	3	4	5	6	7	8	9	10	P6 MODE 1: LSB 2: USB 3: CW 4: FM 5: AM 6: FSK (RTTY-LSB)
	М	R	P1	P1	P1	P2	P2	P2	P2	P2	7: CW-R 8: PKT-L 9: FSK-R (RTTY-USB) A: PKT-FM
	11	12	13	14	15	16	17	18	19	20	B: FM-N C: PKT-U P7 0: VFO 1: Memory
	P2	P2	P2	P3	P3	P3	P3	P3	P4	P5	P8 0: CTCSS "OFF" 1: CTCSS ENC/DEC 2: CTCSS ENC
	21	22	23	24	25	26	27	28	29	30	P9: Tone Number (See Table 1)
	P6	P7	P8	P9	P9	P10	;				P10 0: Simplex 1: Plus Shift 2: Minus Shift

MS	ME.	TER	SW							
Set	1	2	3	4	5	6	7	8	9	10
	М	S	P1	;						
Read	1	2	3	4	5	6	7	8	9	10
	М	S	;							
Answer	1	2	3	4	5	6	7	8	9	10
	М	S	P1	;						

MW	MEI	MOR	Y CH	IANN	IEL \	VRIT	E				
Set	1	2	3	4	5	6	7	8	9	10	P1 Memory Channel Number P2 Memory Channel Frequency (Hz)
	М	W	P1	P1	P1	P2	P2	P2	P2	P2	P3 Clarifier Direction +: Plus Shift, -: Minus Shift
	11	12	13	14	15	16	17	18	19	20	Clarifier Offset: 0000 - 9999 (Hz) P4 0: RX CLAR "OFF" 1: RX CLAR "ON"
	P2	P2	P2	P3	P3	P3	P3	P3	P4	P5	P5 0:TX CLAR "OFF" 1: TX CLAR "ON"
	21	22	23	24	25	26	27	28	29	30	P6 MODE 1: LSB 2: USB 3: CW 4: FM 5: AM 6: FSK (RTTY-LSB)
	P6	P7	P8	P9	P9	P10	;				7: CW-R 8: PKT-L 9: FSK-R (RTTY-USB) A: PKT-FM
Read	1	2	3	4	5	6	7	8	9	10	B: FM-N C: PKT-U P7 0: (Fixed)
											P8 0: CTCSS "OFF" 1: CTCSS ENC/DEC 2: CTCSS ENC
Answer	1	2	3	4	5	6	7	8	9	10	P9: Tone Number (See Table on page 5)
											P10 0: Simplex 1: Plus Shift 2: Minus Shift

MX	MO	X SE	Т								
Set	1	2	3	4	5	6	7	8	9	10	P1 0: MOX "OFF"
	М	Х	P1								1: MOX "ON"
Read	1	2	3	4	5	6	7	8	9	10	
	N	Χ	;								
Answer	1	2	3	4	5	6	7	8	9	10	
	N	Х	P1	;							

NA	NAI	RRO	N								
Set	1	2	3	4	5	6	7	8	9	10	P1 0: Fixed
	М	Α	P1	P2	;						P2 0: NARROW "OFF"
Read	1	2	3	4	5	6	7	8	9	10	1: NARROW "ON"
	N	Α	P1	;							
Answer	1	2	3	4	5	6	7	8	9	10	
	N	Α	P1	P2	;						

NB	NOI	SE E	BLAN	IKER	STA	TUS						
Set	1	2	3	4	5	6	7	8	9	10		0: Fixed
	N	В	P1	P2	;						P2	0: Noise Blanker "OFF"
Read	1	2	3	4	5	6	7	8	9	10	1	1: Noise Blanker "ON" 2: Noise Blanker (Wide) "ON"
	N	В	P1	;							1	2. Noise Biatiker (Wide) ON
Answer	1	2	3	4	5	6	7	8	9	10	1	
	N	В	P1	P2	;						1	

NL	NOI	SE E	BLAN	IKER	LE\	/EL					
Set	1	2	3	4	5	6	7	8	9	10	P1 0: Fixed
	N	L	P1	P2	P2	P2	;				P2 000 - 255
Read	1	2	3	4	5	6	7	8	9	10	
	N	L	P1	;							
Answer	1	2	3	4	5	6	7	8	9	10	
	N	L	P1	P2	P2	P2	;				

NR	NOI	SE F	REDU	ICTIC	NC							
Set	1	2	3	4	5	6	7	8	9	10		*** ****
	N	R	P1	P2	;						P2	0: Noise Reduction "OFF"
Read	1	2	3	4	5	6	7	8	9	10	1	1: Noise Reduction "ON"
	N	R	P1	;								
Answer	1	2	3	4	5	6	7	8	9	10	1	
	N	R	P1	P2	;							

OPF	<u>POSI</u>	<u>TE B</u>	<u>AND</u>	INF	<u>ORM</u>	<u>ATIC</u>	<u>N</u>			
1	2	3	4	5	6	7	8	9	10	P1 Current Memory Channel P2 VFO-B Frequency (Hz)
										P3 Clarifier Direction +: Plus Shift, -: Minus Shift
1	2	3	4	5	6	7	8	9	10	Crarifier Offset: 0000 - 9999 (Hz) P4 0: RX CLAR "OFF" 1: RX CLAR "ON"
0		;								P5 0:TX CLAR "OFF" 1: TX CLAR "ON"
1	2	3	4	5	6	7	8	9	10	P6 MODE 1: LSB 2: USB 3: CW 4: FM 5: AM 6: FSK (RTTY-LSB)
0	Ι	P1	P1	P1	P2	P2	P2	P2	P2	
11	12	13	14	15	16	17	18	19	20	B: FM-N C: PKT-U P7 0: VFO 1: Memory
P2	P2	P2	P3	P3	P3	P3	P3	P4	P5	P8 0: CTCSS "OFF" 1: CTCSS ENC/DEC 2: CTCSS ENC
21	22	23	24	25	26	27	28	29	30	P9: Tone Number (See Table on page 5)
P6	P7	P8	P9	P9	P10	;				P10 0: Simplex 1: Plus Shift 2: Minus Shift
	1 0 1 0 11 P2 21	1 2 0 I 1 2 0 I 1 1 2 0 I 1 1 12 P2 P2 21 22	1 2 3 1 2 3 O I ; 1 2 3 O I 91 11 12 13 P2 P2 P2 21 22 23	1 2 3 4 1 2 3 4 O I ; 1 2 3 4 O I ; 1 2 3 4 O I P1 P1 11 12 13 14 P2 P2 P2 P3 21 22 23 24	1 2 3 4 5 1 2 3 4 5 O I ; 1 2 3 4 5 O I P1 P1 P1 11 12 13 14 15 P2 P2 P2 P3 P3 21 22 23 24 25	1 2 3 4 5 6 1 2 3 4 5 6 0 I ; 1 2 3 4 5 6 0 I P1 P1 P1 P2 11 12 13 14 15 16 P2 P2 P2 P3 P3 P3 21 22 23 24 25 26	1 2 3 4 5 6 7 1 2 3 4 5 6 7 O I ; 1 2 3 4 5 6 7 O I P1 P1 P1 P2 P2 11 12 13 14 15 16 17 P2 P2 P2 P3 P3 P3 P3 21 22 23 24 25 26 27	1 2 3 4 5 6 7 8 O I ; 1 2 3 4 5 6 7 8 O I P1 P1 P1 P2 P2 P2 11 12 13 14 15 16 17 18 P2 P2 P2 P3 P3 P3 P3 P3 21 22 23 24 25 26 27 28	1 2 3 4 5 6 7 8 9 1 2 3 4 5 6 7 8 9 0 I; 1 2 3 4 5 6 7 8 9 0 I; 1 2 3 4 5 6 7 8 9 0 I P1 P1 P1 P2 P2 P2 P2 11 12 13 14 15 16 17 18 19 P2 P2 P2 P3 P3 P3 P3 P3 P3 P4 21 22 23 24 25 26 27 28 29	1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 O I ; 1 2 3 4 5 6 7 8 9 10 O I P1 P1 P1 P2 P2 P2 P2 P2 11 12 13 14 15 16 17 18 19 20 P2 P2 P2 P3 P3 P3 P3 P3 P3 P4 P5 21 22 23 24 25 26 27 28 29 30

	OFFSET (REPEATER SHIFT) 1 2 3 4 5 6 7 8 9 10 P1 0 Fixed													
OS	OFF	SET	(RE	PEA [°]	TER	SHIF	T)							
Set	1	2	3	4	5	6	7	8	9	10	0 P1 0: Fixed			
	0	S	P1	P2	;						P2 0: Simplex			
Read	1	2	3	4	5	6	7	8	9	10	1: Plus Shift 2: Minus Shift			
	0	S	P1	;							★: This command can be activated only with an FM mode.			
Answer	1	2	3	4	5	6	7	8	9	10	0			
	0	S	P1	P2	;									
PA	PRE	-AM	P (IP	O)										
Set	1	2	3	4	5	6	7	8	9	10				
	Р	Α	P1	P2	;						P2 0: IPO 1: AMP 1			
Read	1	2	3	4	5	6	7	8	9	10	2: AMP 2			
Anguyar	Р	<u>A</u>	P1	;	_		_		9	40				
Answer	1 P	2 A	3 P1	4 P2	5	6	7	8	9	10				
				1 2	,	l			l					
PB	PLA													
Set	1	2	3	4	5	6	7	8	9	10	0 P1 0: Fixed P2 0: DVS-6 (Recording Stop)			
Read	P	B	P1 3	P2 4	; 5	6	7	8	9	10	1: DVS-6 (CH "1" Recording Start/Stop)			
Neau	P	B	ە P1		5	0	/	0	9	10	— 2: DVS-6 (CH "2" Recording Start/Stop)			
Answer	1	2	3	4	5	6	7	8	9	10	3: DVS-6 (CH "3" Recording Start/Stop) *: This command does not activates 4: DVS-6 (CH "4" Recording Start/Stop) when the optional DVS-6 Voice			
	Р	В	P1	P2	:		-				5: DVS-6 (CH "5" Recording Start/Stop) Memory Unit is not installed.			
					,									
PC Set			CON		$\overline{}$		_			10	D4 005 400			
Set	1 P	2 C	3 P1	4 P1	5 P1	6	7	8	9	10	0 P1 005 - 100			
Read	1	2	3	4	5	6	7	8	9	10				
litoda	P	C	:			_			_	10	<u>-</u>			
Answer	1	2	3	4	5	6	7	8	9	10	0			
	Р	С	P1	P1	P1	;								
PL	e D E	ECL	l PRO)CE	ee0	DIE	VEL							
Set	1	2	3	4	5	6	7	8	9	10	0 P1 000 - 100			
	P	L	P1	P1	P1	:			۰					
Read	1	2	3	4	5	6	7	8	9	10	0			
	Р	L	;											
Answer	1	2		4	5	6	7	8	9	10				
			3		_					-	0			
	Р	L	3 P1	P1	P1	;					0			
PR	Р	L	P1	P1	P1	,					0			
PR Set	Р	L		P1	P1	,	7	8	9	10	0 P1 0: Speech Processor "OFF"			
	P	L ECH	P1	P1	P1 SSO I	R	7	8	9		0 P1 0: Speech Processor "OFF" 1: Speech Processor "ON"			
	P SPE 1 P 1	2 R 2	P1 3 P1 3	P1 DCE:	P1 SSO I	R	7	8	9		0 P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON"			
Set Read	P SPE 1 P 1	ECH 2 R 2 R	P1 3 P1 3 ;	P1 OCE 4 ; 4	91 5 5	6 6	7	8	9	10	P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON"			
Set	P 1 P 1 P 1	2 R 2 R 2	P1 3 P1 3 ;	P1 OCE: 4 ; 4	P1 SSO I	, R 6				10	P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON"			
Set Read	P SPE 1 P 1	ECH 2 R 2 R	P1 3 P1 3 ;	P1 OCE 4 ; 4	91 5 5	6 6	7	8	9	10	P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON"			
Set Read Answer	P SPE 1 P 1 P 1 P	ECH 2 R 2 R 2 R	P1 3 P1 3 ;	P1 4 ; 4 ;	91 5 5	6 6	7	8	9	10	P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON"			
Set Read Answer	P SPE 1 P 1 P 1 P 1 P 1 P	L 2 R 2 R 2 R 2 R 2	P1 3 P1 3 ; 3 P1 3 P1 3 SWI	P1 OCE 4 ; 4 ; TCH	91 5 5	6 6	7	8	9	10	D P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON" D P1 0: POWER "OFF"			
Read Answer PS Set	P SPE 1 P 1 P 1 P 1 P	L 2 R 2 R 2 R 2 S	P1 3 P1 3 ; 3 P1 3 P1 SWI 3 P1	P1 OCE 4 ; 4 ; TCH 4 ;	5 5 5 5	6 6	7 7	8 8	9 9	10 10 10	0 P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON" 0 P1 0: POWER "OFF" 1: POWER "ON" This command requires dummy data be initially sent. Then after one second and			
Set Read Answer	P SPE 1 P 1 P 1 P 1 P 1 P 1 P 1 P	2 R 2 R 2 R 2 R	P1 3 P1 3 ; 3 P1 3 P1 3 P1 3	P1 OCE 4 ; 4 ; TCH	5 5 5	6 6	7	8	9	10	0 P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON" 0 P1 0: POWER "OFF" 1: POWER "ON" This command requires dummy data be initially sent. Then after one second and			
Read Answer PS Set Read	P SPE 1 P 1 P 1 P 1 P 1 P 1 P 1 P	L 2 R 2 R 2 R S 2 S S	P1 3 P1 3 ; 3 P1 3 P1 3 ; 3 P1 ;	P1 DCE: 4 ; 4 ; 7 TCH 4 ; 4	P1 5 5 5 5 5	6 6 6	7 7 7 7	8 8 8	9 9 9	10 10 10 10	P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON" 0 P1 0: POWER "OFF" 1: POWER "ON" This command requires dummy data be initially sent. Then after one second and before two seconds the command is sent.			
Read Answer PS Set	P	L 2 R 2 R 2 R 2 S 2 S 2 S 2	P1 3 P1 3 ; 3 P1 3 P1 3 ; 3 P1 3 ; 3	P1 OCE 4 ; 4 ; TCH 4 ;	5 5 5 5	6 6	7 7	8 8	9 9	10 10 10	P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON" 0 P1 0: POWER "OFF" 1: POWER "ON" This command requires dummy data be initially sent. Then after one second and before two seconds the command is sent.			
Read Answer PS Set Read Answer	P	L 2 R 2 R 2 R S 2 S S S	P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 7 P1	P1 DCE 4 ; 4 ; TCH 4 4 4	P1 5 5 5 5 5	6 6 6	7 7 7 7	8 8 8	9 9 9	10 10 10 10	P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON" 0 P1 0: POWER "OFF" 1: POWER "ON" This command requires dummy data be initially sent. Then after one second and before two seconds the command is sent.			
Read Answer PS Set Read Answer	P	ECH 2 R 2 R 2 R 2 S 2 S S S S S S S S S S S	P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 0 CRE	P1 DCE 4 ; 4 ; 4 ; TCH 4 ; ;	P1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	6 6 6	7 7 7 7	8 8 8	9 9 9	10 10 10 10 10	P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON" D P1 0: POWER "OFF" 1: POWER "ON" This command requires dummy data be initially sent. Then after one second and before two seconds the command is sent.			
Read Answer PS Set Read Answer	P	L 2 R 2 R 2 R S 2 S S S S S S S S S S S S	P1 3	P1 DCE 4 ; 4 ; TCH 4 4 4	P1 5 5 5 5 5	6 6 6	7 7 7 7	8 8 8	9 9 9	10 10 10 10	P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON" D P1 0: POWER "OFF" 1: POWER "ON" This command requires dummy data be initially sent. Then after one second and before two seconds the command is sent.			
Read Answer PS Set Read Answer	P	L EECH 2 R 2 R 2 R 2 S 2 S 2 S 2 S 1	P1 3 P1 3 ; 3 P1 3 P1 3 P1 3 P1 3 ; 3 P1 ORE	P1 OCE: 4 ; 4 ; 4 ; TCH 4 ; 4	P1 5 5 5 5 5 5 5	6 6 6 6	7 7 7 7	8 8 8 8	9 9 9	10 10 10 10 10	P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON" D P1 0: POWER "OFF" 1: POWER "ON" This command requires dummy data be initially sent. Then after one second and before two seconds the command is sent.			
Read Answer PS Set Read Answer	P	L 2 R 2 R 2 R S 2 S S S S S S S S S S S S	P1 3	P1 DCE 4 ; 4 ; 4 ; TCH 4 ; ;	P1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	6 6 6	7 7 7 7	8 8 8	9 9 9	10 10 10 10 10	P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON" D P1 0: POWER "OFF" 1: POWER "ON" This command requires dummy data be initially sent. Then after one second and before two seconds the command is sent.			
Read Answer PS Set Read Answer	P	L EECH 2 R 2 R 2 R 2 S 2 S 2 S 2 S 1	P1 3 P1 3 ; 3 P1 3 P1 3 P1 3 P1 3 ; 3 P1 ORE	P1 OCE: 4 ; 4 ; 4 ; TCH 4 ; 4	P1 5 5 5 5 5 5 5	6 6 6 6	7 7 7 7	8 8 8 8	9 9 9	10 10 10 10 10	P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON" D P1 0: POWER "OFF" 1: POWER "ON" This command requires dummy data be initially sent. Then after one second and before two seconds the command is sent.			
Read Answer PS Set Read Answer QI Set Read	P	L 2 R 2 R 2 R 2 S 2 S 2 S 2 S 1 2	P1 3 P1 3 P1 3 P1 3 P1 5 SWI 3 P1 3 P1 3 P1 3 P1 3 P1	P1 DCE: 4 ; 4 ; 4 ; TCH 4 ; 4 4 ;	P1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	6 6 6 6	7 7 7 7 7 7	8 8 8 8 8	9 9 9 9 9	10 10 10 10 10 10	P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON" D P1 0: POWER "OFF" 1: POWER "ON" This command requires dummy data be initially sent. Then after one second and before two seconds the command is sent.			
Read Answer PS Set Read Answer QI Set Read Answer	P	L 2 R 2 R 2 R 2 S 2 S 2 S 1 2 2	P1 3 ; 3 P1 3 ; 3 P1 SWI 3 ; 3 P1 SORE	P1 4 ; 4 ; 4 ; 4 4 4 4 4 4 4	P1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	6 6 6 6	7 7 7 7 7 7	8 8 8 8 8	9 9 9 9 9	10 10 10 10 10 10	P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON" D P1 0: POWER "OFF" 1: POWER "ON" This command requires dummy data be initially sent. Then after one second and before two seconds the command is sent.			
Read Answer PS Set Read Answer QI Set Read Answer	P	L 2 R 2 R 2 R 2 S 2 S 2 S 2 S 3 B ST 2 1 2 2	P1 3	P1 4 ; 4 ; 4 ; 4 4 ; 4 L	5 5 5 5 5 5 5	6 6 6 6 6 6	7 7 7 7 7 7 7 7	8 8 8 8 8 8	9 9 9 9 9	10 10 10 10 10 10 10	P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON" D1			
Read Answer PS Set Read Answer QI Set Read Answer	P	L 2 R 2 R 2 R 2 S 2 S 3 2 S 3 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	P1 3	P1 4 ; 4 ; 4 ; 4 4 4 4 4 4 4	F1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	6 6 6 6	7 7 7 7 7 7	8 8 8 8 8	9 9 9 9 9	10 10 10 10 10 10	P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON" D1			
Read Answer PS Set Read Answer QI Set Read Answer	P	L 2 R 2 R 2 R 2 S 2 S 2 S 2 S 3 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	P1 3	P1 4 ; 4 4 ; TCH 4 ; 4 4 L 4	5 5 5 5 5 5 5 5	6 6 6 6 6 6	7 7 7 7 7 7 7 7 7 7 7 7 7	8 8 8 8 8 8 8	9 9 9 9 9 9	10 10 10 10 10 10 10	D P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON" D P1 0: POWER "OFF" 1: POWER "ON" This command requires dummy data be initially sent. Then after one second and before two seconds the command is sent.			
Read Answer PS Set Read Answer QI Set Read Answer	P	L 2 R 2 R 2 R 2 S 2 S 3 2 S 3 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	P1 3	P1 4 ; 4 ; 4 ; 4 4 ; 4 L	5 5 5 5 5 5 5	6 6 6 6 6 6	7 7 7 7 7 7 7 7	8 8 8 8 8 8	9 9 9 9 9	10 10 10 10 10 10 10	D P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON" D P1 0: POWER "OFF" 1: POWER "ON" This command requires dummy data be initially sent. Then after one second and before two seconds the command is sent.			
Read Answer PS Set Read Answer QI Set Read Answer	P	L 2 R 2 R 2 R 2 S 2 S 2 S 2 S 3 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	P1 3	P1 4 ; 4 4 ; TCH 4 ; 4 4 L 4	5 5 5 5 5 5 5 5	6 6 6 6 6 6	7 7 7 7 7 7 7 7 7 7 7 7 7	8 8 8 8 8 8 8	9 9 9 9 9 9	10 10 10 10 10 10 10	P1 0: Speech Processor "OFF" 1: Speech Processor "ON" 2: Parametric Microphone Equalizer "ON" D1			

	1	01/ /									
QS	QUI	CK S	SPLIT								
Set	1	2	3	4	5	6	7	8	9	10	
	Q	S						-			1
<u> </u>	_		,								-
Read	1	2	3	4	5	6	7	8	9	10	
1											7
Answer	 			-	-	_		_	_	40	-
Answei	1	2	3	4	5	6	7	8	9	10	
1	1										
	•					•					
RA	RF	ATTE	NUA	TOR	<u> </u>						
	_					_	7	0	_	40	D4 O: Fixed
Set	1	2	3	4	5	6	7	8	9	10	
1	R	Α	P1	P2	;						P2 0: OFF
Read	1	2	3	4	5	6	7	8	9	10	1: 6 dB
11000	-		_	_	۱Ů	l –			_	10	- 2: 12 aB
	R	Α	P1	;							3: 18 dB
Answer	1	2	3	4	5	6	7	8	9	10	
1	R	Α	P1	P2							
	110			1 2	,						
DO	I CL /	ND C	LEAD	_							
RC	CLA	AR C	LEA	X							
Set	1	2	3	4	5	6	7	8	9	10	
	R	С									
Bood	_		,	-	-		-		_	40	┥
Read	1	2	3	4	5	6	7	8	9	10	4
	1										
Answer	1	2	3	4	5	6	7	8	9	10	7
1	<u> </u>		۰	_	۰		-	-	9	10	-
RD	CLA	۱R M	INUS	OF	FSE1	Γ					
Set	1	2	3	4	5	6	7	8	9	10	P1 0000 - 9999 (Hz)
1001	_							- 0	- 3	10	11 0000 5555 (1.2)
	R	D	P1	P1	P1	P1	;				
Read	1	2	3	4	5	6	7	8	9	10	
1											7
A	 	_	-		_	-	_		-		-
Answer	1	2	3	4	5	6	7	8	9	10	
1	1										
											•
RF	RO	OFIN	G FII	TER	2						
Set						_	7	0	_	40	D4 0: Fixed D2 4: 45 kHz
Set	1	2	3	4	5	6	7	8	9	10	
1	R	F	P1	P2	;						P2 0: AUTO 2: 6 kHz
Read	1	2	3	4	5	6	7	8	9	10	1: 15 kHz 3: 3 kHz
I TCGG	_				-	-	-	- 0	- 0	10	2: 6 kHz
	R	F	P1	;							☑ 3: 3 kHz 5: AUTO - 6kHz
Answer	1	2	3	4	5	6	7	8	9	10	
	R	F	P1	P3							6: AUTO - 3 kHz
	N										6: AUTO - 3 kHz
DC.	l DE				,						6: AUTO - 3 kHz
RG		CAIN			,						6: AUTO - 3 kHz
Set	_	GAIN			,						
Joer	1 RF	GAIN 2	3	4	5	6	7	8	9	10	
1061	1	2	3	4	5	_	7	8	9	10	
	1 R	2 G	3 P1	4 P2	5 P2	P2	;				P1 0: Fixed P2 000 - 255
Read	1 R	2 G 2	3 P1 3	4 P2 4	5	_		8	9	10	P1 0: Fixed P2 000 - 255
	1 R	2 G	3 P1	4 P2	5 P2	P2	;				P1 0: Fixed P2 000 - 255
Read	1 R 1 R	2 G 2 G	3 P1 3 P1	4 P2 4 ;	5 P2 5	P2 6	7	8	9	10	P1 0: Fixed P2 000 - 255
	1 R 1 R 1	2 G 2 G	3 P1 3 P1 3	4 P2 4 ;	5 P2 5	P2 6	7				P1 0: Fixed P2 000 - 255
Read	1 R 1 R	2 G 2 G	3 P1 3 P1	4 P2 4 ;	5 P2 5	P2 6	7	8	9	10	P1 0: Fixed P2 000 - 255
Read Answer	1 R 1 R	2 G 2 G 2 G	3 P1 3 P1 3 P1	4 P2 4 ; 4 P2	5 P2 5 P2	6 6 P2	7	8	9	10	P1 0: Fixed P2 000 - 255
Read	1 R 1 R	2 G 2 G 2 G	3 P1 3 P1 3 P1	4 P2 4 ; 4 P2	5 P2 5	6 6 P2	7	8	9	10	P1 0: Fixed P2 000 - 255
Read Answer	1 R 1 R 1 R R R R R R R R R R R R R R R	2 G 2 G 2 G	3 P1 3 P1 3 P1	4 P2 4 ; 4 P2	5 P2 5 P2	P2 6 6 P2	; 7 7 ;	8	9	10	P1 0: Fixed P2 000 - 255
Read Answer	1 R 1 R	2 G 2 G 2 G	3 P1 3 P1 3 P1	4 P2 4 ; 4 P2	5 P2 5 P2	6 6 P2	7	8	9	10	P1 0: Fixed P2 000 - 255
Read Answer RI Set	1 R 1 R 1 R 1 R 1 R 1 R 1 1 R 1 1	2 G 2 G 2 G DIO I	3 P1 3 P1 3 P1	4 P2 4 ; 4 P2	5 P2 5 P2 TION	6 6 P2	; 7 7 ;	8 8	9 9	10	P1 0: Fixed P2 000 - 255 P1 0: Hi-SWR 1: MIC-EQ 3: REC
Read Answer	1 R 1 R 1 R R R R R R R R R R R R R R R	2 G 2 G 2 G	3 P1 3 P1 3 P1	4 P2 4 ; 4 P2	5 P2 5 P2	P2 6 6 P2	; 7 7 ;	8	9	10	P1 0: Fixed P2 000 - 255 P1 0: Hi-SWR 1: MIC-EQ 3: REC
Read Answer RI Set	1 R 1 R 1 R 1 R 1 R 1 1 1 1 1	2 G 2 G 2 G	3 P1 3 P1 3 P1 NFO	4 P2 4 ; 4 P2	5 P2 5 P2 TION	6 6 P2	; 7 7 ;	8 8	9 9	10	P1 0: Fixed P2 000 - 255 P1 0: Hi-SWR 1: MIC-EQ 3: REC 4: PLAY
Read Answer RI Set Read	1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R	2 G 2 G 2 G DIO I 2	3 P1 3 P1 3 P1 NFO	4 P2 4 ; 4 P2 RMA 4	5 P2 5 P2 TION 5	6 P2 6 P2	; 7 7 ;	8 8 8	9 9 9	10	P1 0: Fixed P2 000 - 255 P1 0: Hi-SWR 1: MIC-EQ 3: REC 4: PLAY P2 0: OFF
Read Answer RI Set	1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R	2 G 2 G 2 G	3 P1 3 P1 3 P1 3 P1 3 P1 3	4 P2 4 ; 4 P2 RMA 4 ;	5 P2 5 P2 TION 5	6 6 P2	; 7 7 ;	8 8	9 9	10	P1 0: Fixed P2 000 - 255 P1 0: Hi-SWR 1: MIC-EQ 3: REC 4: PLAY P2 0: OFF
Read Answer RI Set Read	1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R	2 G 2 G 2 G DIO I 2	3 P1 3 P1 3 P1 NFO	4 P2 4 ; 4 P2 RMA 4	5 P2 5 P2 TION 5	6 P2 6 P2	; 7 7 ;	8 8 8	9 9 9	10	P1 0: Fixed P2 000 - 255 P1 0: Hi-SWR 1: MIC-EQ 3: REC 4: PLAY P2 0: OFF
Read Answer RI Set Read	1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R	2 G 2 G 2 G DIO I 2 I 2	3 P1 3 P1 3 P1 3 P1 3 P1 3	4 P2 4 ; 4 P2 RMA 4 ;	5 P2 5 P2 TION 5	6 P2 6 P2	; 7 7 ;	8 8 8	9 9 9	10	P1 0: Fixed P2 000 - 255 P1 0: Hi-SWR 1: MIC-EQ 3: REC 4: PLAY P2 0: OFF
Read Answer RI Set Read Answer	1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R	2 G 2 G 2 G DIO I 2 I 2 I	3 P1 3 P1 3 P1 NFO 3 P1 3 P1	4 P2 4 ; 4 P2 RMA 4 ; 4	5 P2 5 P2 5 P2	P2 6 P2	; 7 7 ;	8 8 8	9 9 9	10	P1 0: Fixed P2 000 - 255 P1 0: Hi-SWR 1: MIC-EQ 3: REC 4: PLAY P2 0: OFF
Read Answer RI Set Read Answer	1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R NOI	2 G 2 G 2 G DIO I 2 I 2 I 1	3 P1 3 P1 3 P1 3 P1 3 P1 3 P1 3 P1	4 P2 4 ; 4 P2 RMA 4 ; 4 P2	5 P2 5 P2 TION 5 5 ;	P2 6 P2 6 6 6	; 7 7 ; 7	8 8 8	9 9 9	10 10 10 10	P1 0: Fixed P2 000 - 255 P1 0: Hi-SWR 1: MIC-EQ 3: REC 4: PLAY P2 0: OFF 1: ON
Read Answer RI Set Read Answer	1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R	2 G 2 G 2 G DIO I 2 I 2 I	3 P1 3 P1 3 P1 NFO 3 P1 3 P1	4 P2 4 ; 4 P2 RMA 4 ; 4 P2	5 P2 5 P2 5 P2	P2 6 P2	; 7 7 ;	8 8 8	9 9 9	10	P1 0: Fixed P2 000 - 255 P1 0: Hi-SWR 1: MIC-EQ 3: REC 4: PLAY P2 0: OFF 1: ON

RL	NOI	SE F	REDU	JCTIC	ON L	EVE	L				
Set	1	2	3	4	5	6	7	8	9	10	P1 0: Fixed
	R	L	P1	P2	P2	;					P2 01 - 15
Read	1	2	3	4	5	6	7	8	9	10	
	R	L	P1	;							
Answer	1	2	3	4	5	6	7	8	9	10	
	R	L	P1	P2	P2	;					

RM	RE/	AD M	ETE	R									
Set	1	2	3	4	5	6	7	8	9	10	P	1 0: S/PO Meter	
											1	1: S Meter	2: Depends of the front panel's METER switch
Read	1	2	3	4	5	6	7	8	9	10	1	3: COMP Meter 5: PO Meter	4: ALC Meter 6: SWR Meter
	R	М	P1	;]	7: ID Meter	8: VDD Meter
Answer	1	2	3	4	5	6	7	8	9	10	P2	2 0 - 255	
	R	М	P1	P2	P2	P2	;						

RO	RO	TATO	R									
Set	1	2	3	4	5	6	7	8	9	10	P1	0: OFF
	R	0	P1	;								1: Counter Clockwise 2: Clockwise
Read	1	2	3	4	5	6	7	8	9	10		3: SPEED 1 % DOWN
	R	0	;									4: SPEED 1 % UP
Answer	1	2	3	4	5	6	7	8	9	10		DIRECTION (0 - 450)
	R	0	P1	P2	P2	P2	P3	P3	P3	;	РЭ	SPEED (0 - 100 %)
RS	RAI	OIO S	TAT	US								
Set	1	2	3	4	5	6	7	8	9	10	P1	0: NORMAL MODE
551	Ė	_		<u> </u>	Ť	Ť	<u> </u>				l	1: MENU MODE
Read	1	2	3	4	5	6	7	8	9	10	1	2: MENU Read (from Optional DMU-2000 Data Managemnt Unit)
	R	S	:								1	
Answer	1	2	3	4	5	6	7	8	9	10	1	
	R	S	P1	;							1	
		_										
RT	CLA											
Set	1	2	3	4	5	6	7	8	9	10	P1	0: RX Clarifier "OFF" 1: RX Clarifier "ON"
	R	Т	P1	;								1. RX Claimer ON
Read	1	2	3	4	5	6	7	8	9	10		
Λ	R	T	;	-	 -	-	_	_			1	
Answer	1	2	3	4	5	6	7	8	9	10	-	
	R	Т	P1	;			<u> </u>					
RU	RX	CLA	RIFIE	R P	LUS	OFF	SET					
Set	1	2	3	4	5	6	7	8	9	10	P1	0000 - 9999 (Hz)
	R	U	P1	P1	P1	P1	;					
Read	1	2	3	4	5	6	7	8	9	10		
Answer	1	2	3	4	5	6	7	8	9	10		
SC	SCA	\ NI										
Set	1	2	3	4	5	6	7	8	9	10	P1	0: Scan "OFF"
001	s	C	P1	-	<u> </u>	-		-		10	l''	1: Scan "ON" (Upward)
Read	1	2	3	4	5	6	7	8	9	10	1	2: Scan "ON" (Downward)
11000	S	C	;	_	 	<u> </u>	<u> </u>				1	
Answer	1	2	3	4	5	6	7	8	9	10	1	
7 110 1101	s	С	P1				,			-10		
				,								
SD	-				ELAY							
Set	1	2	3	4	5	6	7	8	9	10	P1	0000: Full Break-in 0030 - 3000 mS (10 mS/step)
Deed	S	D	P1	P1	P1	P1	;	_			-	0030 - 3000 III3 (10 III3/step)
Read	1	2	3	4	5	6	7	8	9	10		
A	S	D	;	_	-		_	_	_		-	
Answer	1	2	3	4	5	6	7	8	9	10	1	
	S	D	P1	P1	P1	P1	<u>;</u>				<u> </u>	
SF	CLA	\R/V	FO-E	KN	OB F	UNC	TION	1				
Set	1	2	3	4	5	6	7	8	9	10	P1	0: BAND
L	S	F	P1	;								1: MHz
Read	1	2	3	4	5	6	7	8	9	10		2: GRP 3: MCH
	S	F	;									8: Off (Read only)
Answer	1	2	3	4	5	6	7	8	9	10		••
	S	F	P1	;								
SH	WID)TH										
Set	1	2	3	4	5	6	7	8	9	10	P1	0: Fixed
	S	Н	P1	P2	P2	;	T.					00-13: Bandwidth (See Table on the next page)
Read	1	2	3	4	5	6	7	8	9	10	1	
	S	Н	P1	<u> </u>						Ė	1	
Answer	1	2	3	4	5	6	7	8	9	10	1	
	S	Н	P1	P2	P2	;					L	
011	0.5	EZZ	0.55	AP	10							
SM	-	ETE				_	-	_	_	10	D4	O. Fived
Set		2	3	4	5	6	7	8	9	10		0: Fixed 000 - 255
	1						l .					
		2	2	А	E	6	7	0	0	10	1	
Read	1	2 M	3 P1	4	5	6	7	8	9	10		
Read	1 S	М	P1	;								
	1				5 5 P2	6 6 P2	7 7	8	9	10		

SQL	JELC	CLHI	_EVE	ΞL						
1	2	3	4	5	6	7	8	9	10	P1 0: Fixed
S	Q	P1	P2	P2	P2	;				P2 000 - 255
1	2	3	4	5	6	7	8	9	10	
S	Q	P1	;							
1	2	3	4	5	6	7	8	9	10	
S	Q	P1	P2	P2	P2	;				
	1 S 1 S	1 2 S Q 1 2 S Q 1 2	1 2 3 S Q P1 1 2 3 S Q P1 1 2 3	1 2 3 4 S Q P1 P2 1 2 3 4 S Q P1 ; 1 2 3 4	S Q P1 P2 P2 1 2 3 4 5 S Q P1 ; 1 2 3 4 5	1 2 3 4 5 6 S Q P1 P2 P2 P2 1 2 3 4 5 6 S Q P1 ; 1 2 3 4 5 6	1 2 3 4 5 6 7 S Q P1 P2 P2 P2 ; 1 2 3 4 5 6 7 S Q P1 ; . . 1 2 3 4 5 6 7	1 2 3 4 5 6 7 8 S Q P1 P2 P2 P2 ; 1 2 3 4 5 6 7 8 S Q P1 ; 1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8 9 S Q P1 P2 P2 P2 ; 1 2 3 4 5 6 7 8 9 S Q P1 ; 1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9 10 S Q P1 P2 P2 P2 ; 1 2 3 4 5 6 7 8 9 10 S Q P1 ; 1 2 3 4 5 6 7 8 9 10

SV	SW	AP V	FO							
Set	1	2	3	4	5	6	7	8	9	10
	S	٧	;							
Read	1	2	3	4	5	6	7	8	9	10
Answer	1	2	3	4	5	6	7	8	9	10

TS	TXV	٧									
Set	1	2	3	4	5	6	7	8	9	10	P1 0:TXW "OFF"
	Т	S	P1	;							1: TXW "ON"
Read	1	2	3	4	5	6	7	8	9	10	
	Т	S	;								
Answer	1	2	3	4	5	6	7	8	9	10	
	Т	S	P1	;							

TX	TX:	SET									
Set	1	2	3	4	5	6	7	8	9	10	
	Т	Х	P1	;							1: RADIO TX "OFF" CAT TX "ON"
Read	1	2	3	4	5	6	7	8	9	10	2: RADIO TX "ON" CAT TX "OFF" (Answer)
	Т	Х	;								
Answer	1	2	3	4	5	6	7	8	9	10	
	Т	Х	P1	;							

UL	PLL	.UNL	OCK	(ST/	ATUS	;					
Set	1	2	3	4	5	6	7	8	9	10	P1 0: PLL "Lock"
											1: PLL "Unlock"
Read	1	2	3	4	5	6	7	8	9	10	
	U	L	;								
Answer	1	2	3	4	5	6	7	8	9	10	
	כ	L	P1	;							

UP	UP									
Set	1	2	3	4	5	6	7	8	9	10
	U	Р	;							
Read	1	2	3	4	5	6	7	8	9	10
Answer	1	2	3	4	5	6	7	8	9	10

COMMAND													
P2	SSB (Narrow)	SSB (Wide)	CW (Narrow)	CW (Wide)	RTTY/PKT (Narrow)	RTTY/PKT (Wide)							
00	1800 Hz	2400 Hz	500 Hz	2400 Hz	300 Hz	500 Hz							
01	200 Hz	_	_		_	_							
02	400 Hz	_	_	_	_	_							
03	600 Hz	_	100 Hz	_	100 Hz	_							
04	850 Hz	_	200 Hz		200 Hz	_							
05	1100 Hz	_	300 Hz	_	300 Hz	_							
06	1350 Hz	_	400 Hz	_	400 Hz	_							
07	1500 Hz	_	500 Hz	500 Hz	500 Hz	500 Hz							
08	1650 Hz	_	_	800 Hz	_	800 Hz							
09	1800 Hz	1800 Hz	_	1200 Hz	_	1200 Hz							
10	_	1950 Hz	_	1400 Hz	_	1400 Hz							
11	_	2100 Hz	_	1700 Hz	_	1700 Hz							
12		2250 Hz	_	2000 Hz	_	2000 Hz							
13	_	2400 Hz	_	2400 Hz	_	2400 Hz							
14	_	2450 Hz	_	_	_	_							
15		2500 Hz	_	_	_	_							
16	_	2600 Hz	_	_	_	_							
17	_	2700 Hz	_	_	_	_							
18	_	2800 Hz	_	_	_	_							
19	_	2900 Hz	_	_	_	_							
20	_	3000 Hz	_	_	_	_							

VD	VOX	DE	LAY	TIME								
Set	1	2	3	4	5	6	7	8	9	10	P1	0030 - 3000 mS (10 mS/step)
1001				_	_			0	٦	10	1"	0000 - 0000 IIIO (10 IIIO/step)
	V	D	P1	P1	P1	P1	;			<u> </u>	-	
Read	1	2	3	4	5	6	7	8	9	10	1	
	٧	D	,									
Answer	1	2	3	4	5	6	7	8	9	10	1	
	v	D	P1	P1	P1	P1					1	
							,				_	
VF	VRF	FIL.	TFR									
Set	1	2	3	4	5	6	7	8	9	10	D1	0: Fixed P4 0 - 9 (Step)
Set	-			_	_	_		0	9	10		0: OFF P5 000 - 255
	٧	F	P1	P2	P3	P4	,		_		I∵−	1: ON P6 1: Fixed
Read	1	2	3	4	5	6	7	8	9	10		2: Default set
	V	F	P1;								P3	+: Plus Shift
Answer	1	2	3	4	5	6	7	8	9	10		-: Minus Shift
	V	F	P1	P2	P5	P5	P5	P6	:		1	
									,			
VG	VOX GAIN											
Set	1	2	3	4	5	6	7	8	9	10	P1	000 - 100
	v	G	P1	P1	P1		'	Ť	Ť	٠.٠	1''	
Dood						,	_	_	_	40	1	
Read	1	2	3	4	5	6	7	8	9	10	-	
	٧	G	;								1	
Answer	1	2	3	4	5	6	7	8	9	10		
	V	G	P1	P1	P1	:					1	
VM	VFC	VFO-A TO MEMORY CHANNEL										
Set	1	2	3	4	5	6	7	8	9	10		
	v	M									1	
Read	1	2	3	4	5	6	7	8	9	10	1	
Reau	1		3	4	5	ь	/	8	9	10	-	
	\vdash										-	
Answer	1	2	3	4	5	6	7	8	9	10	_	
VS	VFC) SEI	LEC1	Γ								
Set	1	2	3	4	5	6	7	8	9	10	P1	0: VFO-A
	V	S	P1	:							1	1: VFO-B
Read	1	2	3	4	5	6	7	8	9	10	1	
	v	S	•	· ·	-		L.	_	_		┨	
Λ 10 0	-	_	,		 _	-	 	_	_	4.5	1	
Answer	1	2	3	4	5	6	7	8	9	10	-	
	V	S	P1	;								
M	1/01	/ CT	T. 15									
VX	$\overline{}$		ATUS									
Set	1	2	3	4	5	6	7	8	9	10	P1	0: VOX "OFF"
	٧	Χ	P1	;					L			1: VOX "ON"
Read	1	2	3	4	5	6	7	8	9	10]	
	v	X	;	Ė	Ť	Ť	Ė		Ė	Ť	1	
Answer	-	2		4	-	_	-	-	_	10	1	
Answer	1		3	4	5	6	7	8	9	10	1	
	V	Х	P1	;								
VT	TV	21.45	_									
XT		CLAF										
Set	1	21	3	4	5	6	7	8	9	10	P1	0: TX CLAR "OFF"
	Х	Т	P1	;								1: TX CLAR "ON"
Read	1	2	3	4	5	6	7	8	9	10	1	
	X	T	;	Ė	Ť	Ť	Ė		Ė	Ť	1	
Answer				1	-	-	7	0		10	1	
Allswell	1	2	3	4	5	6	7	8	9	10	-	
1	X	Т	P1	;	1	1	1	1	l	1	l	

Nоте



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